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Wyoming Issues

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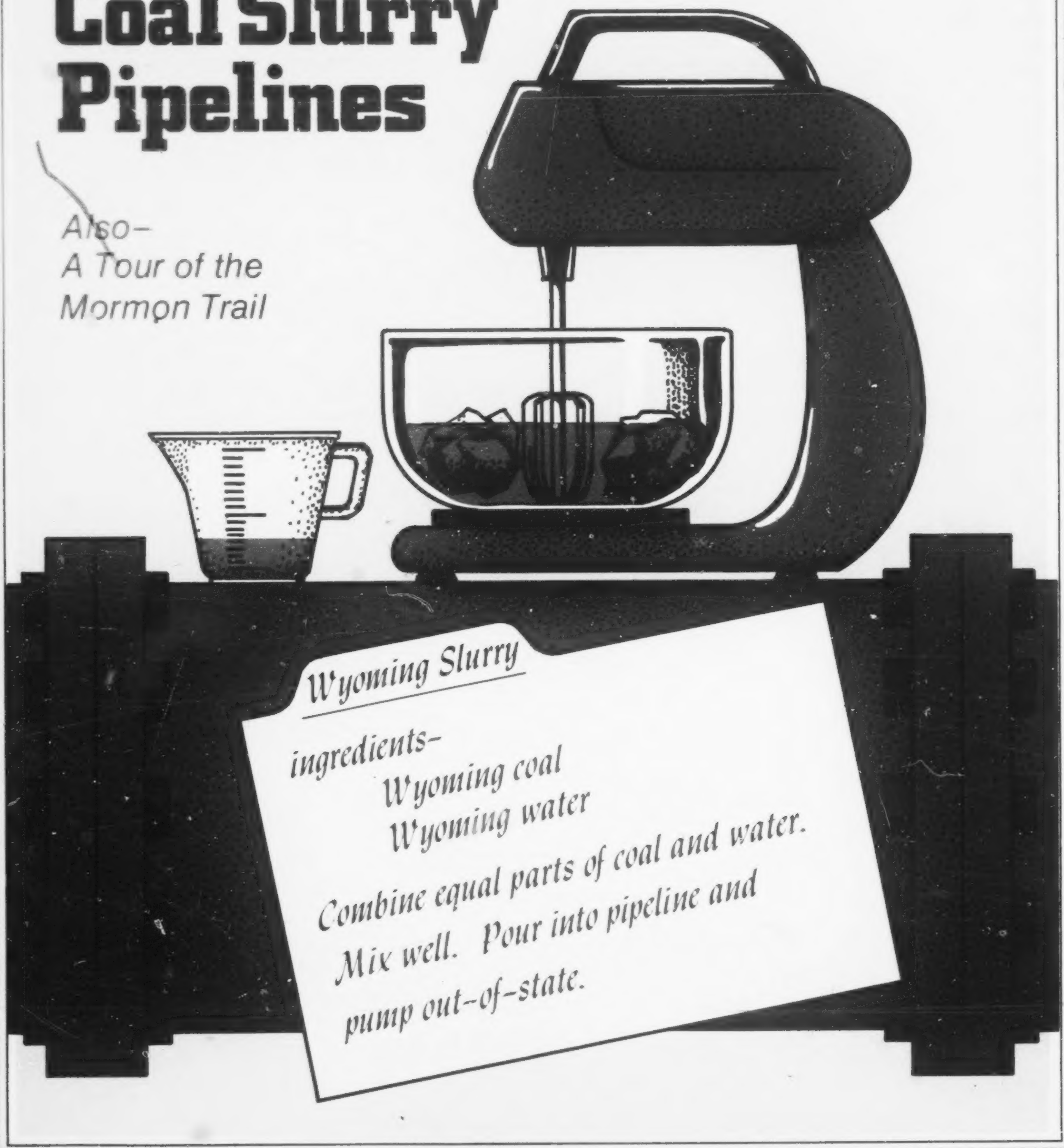
Summer 1981
Vol. 4, No. 3

Coal Slurry Pipelines

*Also–
A Tour of the
Mormon Trail*



Wyoming Slurry

ingredients–
Wyoming coal
Wyoming water

Combine equal parts of coal and water. Mix well. Pour into pipeline and pump out-of-state.

Coal slurry pipelines and federal budget cuts have been the topics of many news stories in the state media this past quarter. The pipelines, discussed in "The Case of the People vs. Coal Slurry Pipelines," have proposed an alternative method of transporting coal from Wyoming to major power plants around the nation. This article outlines the three main objections to pipelines which have not been settled to the satisfaction of pipeline detractors.

President Reagan started his term in office by proposing a major federal budget cut. Those cuts, and how they will affect six Wyoming municipalities and a variety of social programs in the state, are examined in "How Federal Budget Cuts May Affect Wyoming."

For those of you who have not yet decided where to go on vacation this year, Becky Eddins Woodcox conducts an historical and pictorial tour of the Mormon Trial. Many of the areas are still easily accessible, although it is advisable to check locally before trying to get to the more "off the road" areas.

Other articles include a look at Cody artists, and new population figures from the Census Retrieval Information Service, plus Viewpoint by Congressman Cheney, a Spotlight on Augie Auer, Laramie's weather forecaster, and a book review on Peter Iverson's *The Navajo Nation*. Indicators and Forecasts are included, as usual.

We've also included one letter to the editor, written by Dick O'Gara, the man who first did economic indicators for the state. Other letters will be printed as space permits.

For those interested in research being done by various state agencies, a Housing Monitoring System report is now available from the Department of Economic Planning and Development (DEPAD). This system was developed by the Institute for Policy Research for DEPAD. Copies can be obtained from DEPAD, Barrett Building, Cheyenne, WY 82002, (307)777-7284.

Kate Missett

Kate Missett
Managing Editor

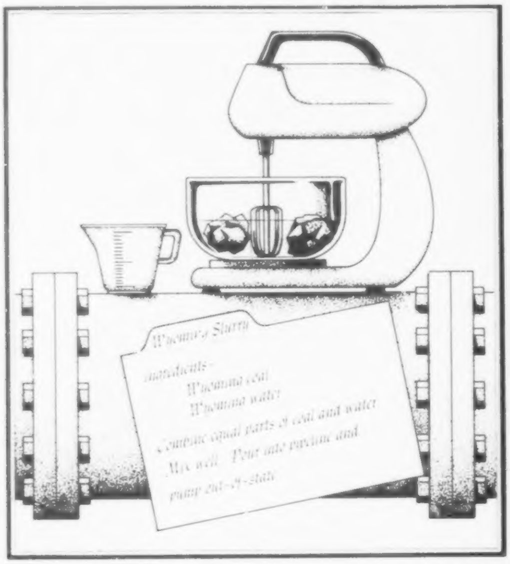
Calendar of Events

July 15-Aug. 7 **Cody**	Lectures. Indian Heritage lecture series at the Buffalo Bill Museum and Historical Center. Check Center for times.
July 15-Sept. 30 **Laramie**	Art shows. July 15-Aug. 31, all Western show. Sept. 1-30, Dolores Fausett, Laramie artist. At the Folk Studio Gallery, 223 Garfield, Laramie. Hours, 9:30-5:30, Mon.-Sat.
July 15-Oct. 4 **Laramie**	Art shows. July 15-31, elements from the permanent collection. July 19-31 master of arts exhibit, Troy Dalton. Aug. 27-Sept. 8, Easter Island artifacts from the Mulloy collection. Sept. 8-Oct. 4, WWI posters. Sept. 17-18 (noon-5), exhibition and sale of original prints. At the Art Museum in the Fine Arts Building on the UW campus. Summer hours, 1-4:30, Sun.-Fri.; fall hours, 1:30-5, Sun.-Fri. The museum will be closed Aug. 1-26.
July 15-Dec. 18 **Cody**	Art shows. July 15-Sept. 25, paintings by Nick Eggenhoffer and a retrospective show of paintings and bronzes by Harry Jackson. Oct. 1-Nov. 29, Leonard Basking, "Western Images," lithographs. Oct. 1-Dec. 18, "Country School Legacy," photos. At the Buffalo Bill Museum and Historical Center.
July 23, 24 & 25 **Laramie**	Play. "Ten Little Indians," by Agatha Christie. Presented by the Wyoming Summer Theater, at 8 p.m. each evening, in the Fine Arts Theater in the Fine Arts Building on the UW campus.
July 29 **Casper**	Workshop. "Veterans Going into Business," sponsored by the Small Business Administration and the Veteran's Outreach Program. For time and place, contact the SBA in Casper, or Veteran's Outreach in Cheyenne.
Aug. 5, 6 & 7 **Rock Springs**	Seminar. Real estate seminar, sponsored by the Institute of Business & Management Services at UW. At the Holiday Inn. Contact the Holiday Inn or IBMS for times.
Sept. 18-20 **Laramie**	Elizabethan Fair. A renaissance fair, sponsored each year by the UW English and Theater departments. Plays, entertainment and crafts. In Hoyt Green, between 9th and 12th on Ivinson.
Sept. 24 **Sheridan**	Seminar. Computer seminar, sponsored by the Institute of Business & Management Services at UW. At Sheridan College. Check with IBMS or Sheridan College for time and place.
Sept. 25 **Cody**	Native American Day. A national event, with special activities to be held at the Buffalo Bill Museum and Historical Center.
Sept. 27-Oct. 1 **Cody**	Workshop. A national workshop on humanities in museums. Sponsored by the American Association for State and Local History. At the Buffalo Bill Museum and Historical Center.
Oct. 7, 8 & 9 **Cheyenne**	Seminar. Real estate seminar, sponsored by the Institute of Business & Management Services at UW. At Little America. Contact Little America or IBMS for times.
Oct 9, 10 & 11 **Cody**	Seminar. Plains Indian seminar, at the Buffalo Bill Museum and Historical Center.

Do you have a pertinent item which you want to place on our Calendar of Events? If so, please send it to *Wyoming Issues*, Box 3925 University of Wyoming, Laramie, Wyoming 82071. Only a few can be used each time, so mail early. To appear in the summer edition, we must have items no later than May 31; for the fall, August 31; winter, November 30; and spring, February 28.

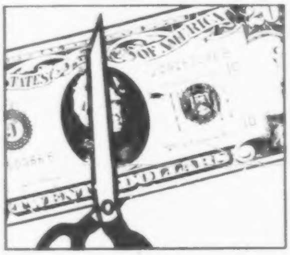
Wyoming

Contents


Wyoming Slurry
Ingredients–
Wyoming coal
Wyoming water
Combine equal parts of coal and water
Mix well. Pour into pipeline and
pump out-of-state

The Mormon Trail – 1847 and 1981

In 1847, Brigham Young began the trek from Iowa to the Salt Lake Valley, taking with him many of the faithful from the Church of Jesus Christ of Latter Day Saints (the Mormons). This article gives a written history of that trek, plus many photographs from the modern day trail.
by Becky Eddins Woodcox . . . . pg. 12



How Federal Budget Cuts May Affect Wyoming

Federal budget cuts are affecting just about every state in the union, and Wyoming is no exception. Six municipalities are examined in this article, along with various social and humanities programs, to see how the proposed budget cuts could affect the state.
by Sheila Nyhus . . . . pg. 18

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Issues

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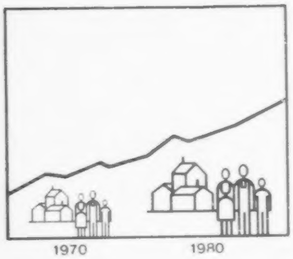
The Case of the People vs. Coal Slurry Pipelines

Railroad representatives, ranchers, and environmentalists have banded together, perhaps for the first time, to protest coal slurry pipelines in Wyoming. One major pipeline, Energy Transportation Systems, Inc. (ETSI), plans to start operations in just two years. Why do these three factions oppose the pipelines? Each faction has its own reason, but the greatest opposition comes from the ranchers who are opposed to shipping Wyoming's water to Gulf Coast states. This article examines the major objections to the pipelines, in particular, the objection to ETSI, which is the closest to actually starting up operations.
by Kate Missett . . . . pg. 4

Cody and Artists — A Mutual Admiration Society

Cody has probably attracted more artists per capita than any other city in the state. In this article, the work of four major Cody artists is shown, along with their comments on why they chose Cody as home.
by K.T.Roes . . . . pg. 26



Housing and Population Figures for Wyoming

Vital housing population figures, as well as general figures comparing Wyoming to other states and Wyoming counties to each other, are included in the latest Census Retrieval Information Service figures this quarter.
by Judy Denison and G. Fred Doll . . . . . . pg. 31

Economic Indicators

Wyoming's Economy Begins 1981 with Mixed Indicator Patterns 37
by Bruce Dougan
Indicators 39
Socioeconomic Indicators
1975 and 1981 Figures Show Decline in Cattle Production 47
by Kim Keeney
Labor Force and Unemployment Statistics Compared for 1977 and 1981 48
by Kim Keeney

Forecasts '81

National Outlook
Wyoming Outlook 49
by Bruce Dougan
Agricultural Outlook 49
Minerals Outlook 50

Departments

Calendar of Events 1
Viewpoint 17
by Dick Cheney
Letters to the Editor 24
Wyoming Books 25
by Kate Missett
Spotlight 34
by Kate Missett

The Case of the People

by Kate Missett

The next time you want to start a conversation, just say "coal slurry pipeline." This is one topic on which nearly everyone has an opinion. The three main arguments against the pipeline are presented here.

At press time, Governor Herschler had requested revisions in the Third Party Beneficiary Agreement between the State and ETSI, including an increase in the amount of bond posted by ETSI and deletion of the clause allowing ETSI to use wastewater to make up any loss of water. ETSI was to have replied to the governor's office by June 15.

Coal slurry pipeline. The phrase evokes different images for various people in Wyoming. Many Wyomingites consider *coal* as a resource with which Wyoming is vastly blessed. Some picture *pipelines* as those inconspicuous structures which crisscross the barren plains of Wyoming. However, to the majority of Wyomingites, one image leaps to mind *slurry* because slurry means water will be consumed. There is no more controversial subject in Wyoming than water, because most of us think the state does not have enough. The pipelines there are four proposed for Wyoming intend to ship Wyoming water out-of-state.

Coal slurry pipelines will compete directly with the railroads, to provide an alternative method of transporting coal, now shipped exclusively by rail. The pipelines will compete by contracting with mines in the state for coal, pulverizing it (all coal is pulverized before use in modern power plants), combining it with water in a 50-50 solution, and shipping the coal/water slurry via a pipeline to the power plants which have agreed to buy it. Once the coal gets to the power plants, it will be spun in a centrifuge to remove most of the water, and burned.

The plan sounds simple. But there are three main objections to the coal slurry pipelines proposed for Wyoming. The first objection comes from the railroads, which are upset that the pipelines are

Coal slurry test loop at the Black Mesa, Arizona, coal pipeline. Note sample being taken at left.

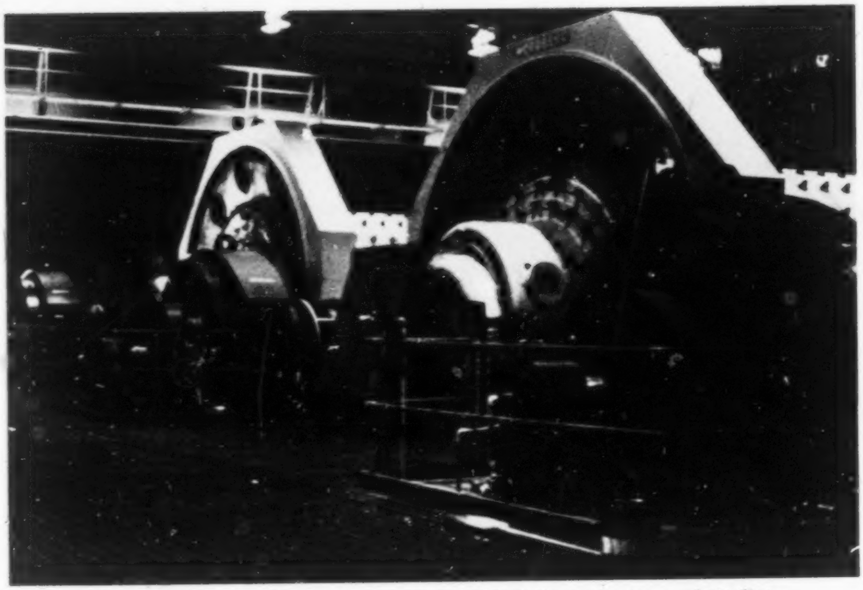
Photo courtesy of Energy Transportation Systems, Inc.

vs. Coal Slurry Pipelines

going to present competition. The second and biggest objection, from the general populace of the state and environmentalists, is that Wyoming water is going to be sent out-of-state and no longer be controlled by the state government. The third is from environmental groups, who are concerned with a number of other possible environmental impacts. Each of these objections is discussed below, beginning with the railroads' contention that coal slurry pipelines aren't viable transportation systems.

Ed Sencabaugh, spokesman for the Union Pacific, doesn't feel pipelines are transportation systems in the true sense of the phrase. "They're delivering from point A to point B. They do not take into consideration the intermediate points. We can haul to small and large users alike. The large utility companies – they'll take 100 car unit trains. There are some small industries that might only take a car or two. We can provide service to these. I feel coal slurry pipelines are a kind of "get rich quick" scheme. They just want to come in and haul one commodity from point A to point B. Immediately, we say, what about all the other commodities? What about all the intermediate points? Just comparing railroads to coal slurry pipelines, I feel that we've got a much more efficient transportation system. A coal slurry pipeline is not truly proposed as a vital part of a sound, viable, essential national transportation network."

Jack Knott, spokesman for Burlington Northern and Colorado Southern, addresses the problem from a slightly different angle. "Our position is that we are opposed, because we think pipelines have bad effects upon not only the coal-using public but also on the other [more general] public. Burlington Northern has made tremedous financial investments to haul coal – in fact, over a billion dollars. If we aren't able to recover the capital that was spent (due to pipelines taking away some of the railroads' business), we will have to recover it from other products and other things that we haul in large volume. It would certainly not only affect Burlington Northern, but many other people, other shippers, and others served by the railroads. Anything that affects Burlington Northern's costs, certainly, in the long run, will affect the people who use Burlington Northern to ship other products, and that's about everybody, directly or indirectly."



A rod mill for pulverizing coal for slurry mixture at the Black Mesa, Arizona, coal pipeline.
Photo courtesy of Energy Transportation Systems, Inc.

One effect that a pipeline could have, Knott says, is that of raising the cost of coal for Wyoming residents. If the railroads have to raise their prices in order to recoup the investments they are making to haul extra coal, those power plants served only by rail, like those in Wyoming, will be charged more for coal, and will likely pass this cost on to consumers. Knott says, "The slurry people themselves acknowledge the railroads will be hauling the bulk of coal, and they're not going to be taking care of the small shipment, the 100,000 tons per year customer. The railroads will certainly expect to do that."

The pipelines are proposing to ship out a good-sized portion of the coal Wyoming exports. For instance, both Energy Transportation Systems, Inc. (ETSI) and the Sheridan-Little Horn Water Group plan to ship 25 million tons of coal annually, for a total of 50 million tons. According to the Wyoming Geological Survey, coal exporting in Wyoming could amount to as much as 148.3 million tons per year by 1990. These two pipelines alone, then, are considering handling a third of the potential market. Because the railroads have been expanding to be able to handle the large amounts of coal expected to be exported, it is possible that the pipelines could hurt the railroads financially.

Arguments put forth by ETSI's manager of mitigation activities, Dennis

Stickley, are only marginally concerned with cost, however. Stickley says the railroads cannot handle the extra tonnage at a competitive price, regardless of whether there are any pipelines. According to Stickley, "To move all of the coal out of the Powder River Basin which needs to be moved would require several additional railroad spurs, and to service the power plants in the coal-consuming areas would also require additional construction." The railroads agree that Stickley's observations are correct. Sencabaugh says, "We're making rapid track expansions, and we've put in a lot of third main line trackage."

The additions, already being implemented, do represent a tremendous investment for the railroads. Pipeline spokesmen say, in effect, that they will be able to have a guaranteed market at a relatively low and fixed price, thus reducing the cost to consumers. Knott says, "I'm sure that if Burlington Northern were permitted to haul only to those with whom they had long-term, fixed contracts, and they didn't have to serve other people or other commodities, they might be able to haul cheaper, too. I'm not saying [the pipelines] can haul it cheaper, because that hasn't been demonstrated, but I can see where it might happen under those types of circumstances."

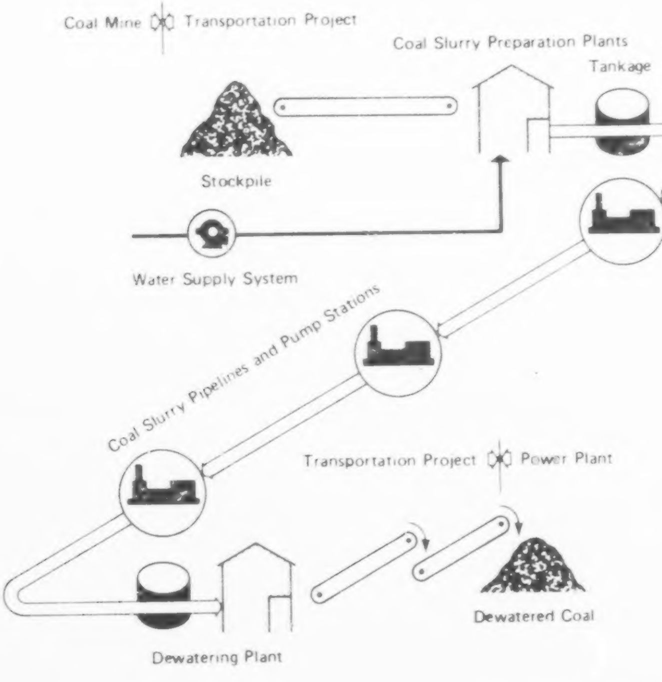
The pipelines' main argument against the railroads, however, is that pipelines are safer and more sound from an environmental standpoint. The pipelines are backed up by a fairly authoritative source, too. In a 1978 report, "A Technology Assessment of Coal Slurry Pipelines," the Office of Technology Assessment, with board members such as Ted Kennedy, Adlai Stevenson, Orrin Hatch and Morris Udall, said, "The environmental choice between coal pipelines as opposed to increased rail traffic primarily involves weighing the water use and temporary construction activity impacts of slurry pipelines against the noise, land-use disruption, railroad crossing accidents, and inconvenience resulting from increased train traffic. All other impacts examined are relatively insignificant or roughly equivalent for both modes" (pg. 4).

The primary environmental disturbance from the railroads would be increased rail traffic. In order for the railroads to haul 25 million tons of coal annually, they would need 2500 trains, each with 100 cars, plus the same number of empty trains on the return trip. According to Sencabaugh, this breaks down to about an additional 14 (seven full and seven empty) trains each day along the shipping route. However, Sencabuagh points out that the Union Pacific now runs 65-70 trains per day through Cheyenne. He also feels that people enjoy watching and hearing the trains, and would not be disturbed by the increased traffic.

Stickley also adds that the railroads are responsible, indirectly, for 17 fatalities a year, and says ETSI "won't kill anybody. We don't think 17 fatalities a year are insignificant."

If the objections to coal slurry pipelines were confined to the issues of causing the railroads inconvenience and possible lost revenue, it is highly unlikely that the people of Wyoming would be up in arms against the pipelines. The primary objection to coal slurry pipelines, the consumption of Wyoming water, is where the real controversy is found. Even Sencabaugh brings it up. "While others are more qualified to look out for Wyoming's water interests than I am," he says, "it is interesting to note that the Wyoming County Commissioners Association recently came out against the pipelines." Specifically, the County Commissioners Association issued a resolution on May 14, 1981, which said that originally ETSI had said it was going to use "brackish" water from the Madison Formation to slurry its coal, and now the water has been found to be potable. The County Commissioners Association "opposes any diversions of any waters from the state which are or could be of beneficial use to Wyoming municipalities, people, agriculture or recreational industries. . . ."

How much water do the slurries propose to use? ETSI, for one, proposes to pump 20,000 acre feet of water per year out of the Madison Formation, an aquifer which overlies Wyoming, Nebraska, and



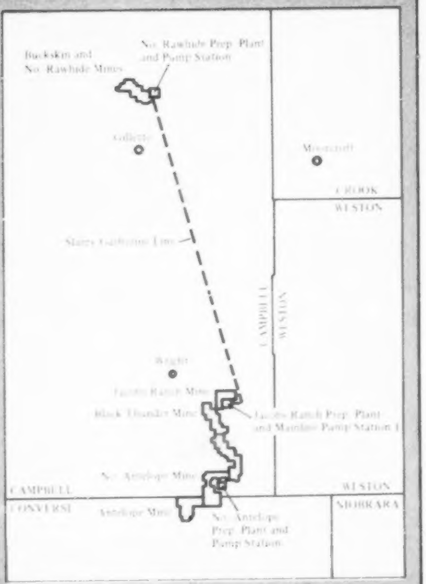
Conceptual description of coal slurry transportation project (from Environmental Impact Statement, Draft, Vol. 1, Bureau of Land Management, Nov. 1980).

What is Energy Transportation Systems, Inc. (ETSI)?

ETSI is a corporation of partner companies, including Bechtel, Lehman Brothers Kuhn Loeb, Kansas Nebraska Gas Co., Texas Eastern, and Atlantic Richfield, Co. (ARCO). ETSI proposes to slurry 25 million tons of coal annually, from mines primarily in Campbell County, Wyoming, to Baton Rouge, Louisiana, and other points in Oklahoma, Arkansas, and Texas, via a 1,664 mile long 48-inch diamter pipeline. ETSI plans to be in operation for 50 years, with construction to begin in 1983, and operations to begin in 1985 (additional construction and extension of the pipeline would continue until 1989).

According to the Draft Environmental Impact Statement (DEIS), issued in November of 1980, the coal would be mined from the Jacobs Ranch and Black Thunder mines, just north of Wright; the North Rawhide and Buckskin mines, just north of Gillette; and the Antelope and North Antelope mines, on the Campbell-Converse county line, close to the Weston County line (see map). Conveyor belts would carry the coal from the mines to the preparation plants, where it would be crushed and combined with water to form the slurry. The slurry would then be kept in agitated storage tanks, until such time as it was needed for the main pipeline, when it would be pumped to the pipeline terminus at Jacobs Ranch.

ETSI has already spent over $35 million on planning, and is now in the design phase. Currently, it is acquiring rights-of-way and final permits, including permits from the Corps of Engineers to cross wetlands or navigable streams and Wyoming air quality permits. The design phase is expected to cost $70 million. The overall cost of the project is projected to be about $1.3 billion.



Coal mine and pipeline terminus locations proposed by ETSI. (From Environmental Impact Statement, Draft, Vol. I, Bureau of Land Management, Nov. 1980).

South Dakota. ETSI will be in business for 50 years, and will require a total of at least one million acre feet. An acre foot contains approximately 326,000 gallons of water; thus, this one project will use at least 326 billion gallons of water.

The real reason people object to pipelines has nothing to do with exporting energy or energy pipelines, according to Warren White, the governor's natural resources advisor. "The opposition is against using water which may be put to beneficial use in Wyoming," White says. "You could argue that by putting the water into a pipeline and exporting it that you are putting the water to beneficial use, but you can put the coal in a rail car and send it to Texas and accomplish the same end, without sacrificing the water. Why should we send our water to Portland, Oregon; Chicago, Illinois; or Houston, Texas? In the spring of each year, those areas are complaining about flooding. Their problem is too much water. Our problem, historically, has always been lack of water. So it doesn't make sense, economically, environmentally, or just plain common sense, to send our water away."

Another primary objection, according to White, is that "once the water gets into a pipeline, and that pipeline is engaged in interstate commerce, the state and the people of Wyoming, henceforth and forever more, lose control of that water. Interstate commerce is regulated by the U.S. Constitution and the U.S. courts, not by the people of Wyoming or by Wyoming courts."

For example, White says, what would happen if a senior appropriator were affected by ETSI's use of the water in the Madison? White theorizes that the state engineer could order a cease and desist order against ETSI (see contract excerpt). However, if the state engineer orders ETSI to stop pumping, the state of Wyoming may be judged as interfering with interstate commerce, which is governed by federal, not state, law. White says, "Essentially, Wyoming cannot pass a law, unless given an express authority by Congress, which prohibits or unduly burdens interstate commerce. Let's say 20 ranchers and farmers are adversely affected [by ETSI]. You've got Houston, New Orleans, Baton Rouge, Little Rock and Oklahoma City all hooked up to this pipeline. If you turn off the pipeline, to protect the 20 ranchers and farmers, you're going to adversely affect two million people in those areas. Who's the court more likely to rule in favor of?"

The adverse effect that ranchers, farmers, and environmentalists fear the most is depletion of the aquifer, causing wells to go dry. According to Mel White, Dayton area rancher, "If we ever allow this water to get out of here in these pipelines, agriculture might as well give up."

Stickley says that ETSI, for one, will not deplete the aquifer it will be using. According to Stickley, estimates of the amounts of water in the Madison Formation range from 150,000 to 400,000 acre feet of water per year, and, Stickley continues, "Since records have been kept on water use out of the Madison, in Wyoming and adjoining states, it's estimated that we've used about 301,000 acre feet. If you look at the reports of the state engineer, it looks as though there may be a billion acre feet in storage." Stickley also maintains that Wyoming users now take only 25,000 acre feet per year out of the Madison, which, considering the amount of water in the aquifer, is within the annual rate of recharge, without mining the groundwater (see Glossary).

But will the well levels in the area above the Madison Formation go down, or will wells completely dry up? Stickley is unclear on the matter. According to Paul Rechard, director of the University of Wyoming's Water Resources Research Institute, the Madison's level will decrease, but the wells in the area are from aquifers above the Madison, and, therefore, will see no decrease. The Madison is a very deep aquifer, varying from 3300 to 5400 feet, according to the Draft Environmental Impact Statement (DEIS) on ETSI, while the surface wells are drilled from shallower aquifers. It is believed by hydrologists that the aquifers above the Madison are not connected to the Madison, but there is some concern by environmentalists that this belief may be in error.

The Powder River Basin Resource Council, in Sheridan with a branch office in Douglas, is one group that is opposed to wholesale pumping of Madison Formation water. In a December 18, 1980, letter to the Bureau of Land Management, which prepared the DEIS, Jon Huss of the Douglas office states, "The primary impact, or area of concern, in ETSI's project is the effect of pumping water out of the Madison for export upon the hydrology of the region. The hydrologic impacts upon shallow aquifers, and consequently upon the individuals or communities reliant upon those aquifers, deserves the greatest scrutiny in the Environmental Impact Statement. Reference should be made to the interaction between the Madison and shallower aquifers, where drawdowns in these aquifers are expected to occur, and how great they will be. An effort should be made to identify the wells in the area which could be affected, and an impact mitigation program established to set up a mechanism that would respond to complaints of well water level reductions, and provide adequate compensation in case of damage."

The impact mitigation program which Huss requests may be provided through the Third Party Beneficiary agreement (again, see contract excerpt). Such an agreement, however, is not yet a requirement for building a pipeline in Wyoming, although ETSI has put up a one million dollar bond to assure the state that it will carry out its share of the contract. Stickley says the contract, "puts existing water users in a unique position." According to Stickley, the contract enables the third party beneficiaries to enforce the contract themselves, without having to rely on the state engineer or the governor to initiate the action. He also says that ETSI, through the contract, is accepting more responsibility than Wyoming water law would place on ETSI. The contract, however, has come under a great deal of criticism, and, although Stickley says that ETSI is willing to review the contract with those who are critical of it, no such review has occurred.

Warren White says, "It's subject to debate whether or not the third party agreement does provide the protection that ranchers and cities think is needed, and if, in fact, it can be documented or proven that the ETSI pipeline will affect domestic, municipal, and agricultural water users. Some of the people say they're not protected, but you can read the contract again and say, well, they are protected. Which means ETSI has either covered all the bases in that contract, or the language is ambiguous and nobody's protected. However, regardless of what's in that third party argument, the people who may or may not be affected by the ETSI pipeline are still protected under Wyoming state law, notwithstanding that third party agreement, because they have senior water rights." The question of interference with interstate commerce could still affect those people who feel they are harmed by ETSI, however.

Some of these arguments put forth

Third Party

Because there has been some discussion and controversy about the Third Party Beneficiary Agreement between ETSI, the state of Wyoming, and existing and preferred users, the section of the contract which is concerned with ETSI's obligations to existing and preferred users is reprinted below.

4. Covenant of ETSI to Protect Beneficial Uses.

In the event ETSI's pumping from the Madison Formation causes interference with the pumping of any existing or preferred user, the State Engineer may on the basis of a valid complaint by any such user, hold a public hearing and investigate and determine whether and to what extent ETSI has caused interference with such user's pumping. If the State Engineer shall determine that any such complaint should be investigated, he shall first undertake any such investigation with his own staff. Should the State Engineer determine that such investigation requires independent consultants to assist in the investigation, the State Engineer shall notify ETSI in writing, and together the State Engineer and ETSI shall select consultants qualified to investigate the complaint. In the event the parties cannot agree on the consultants so to be engaged, the extent of the investigation or the reasonableness of the cost of said investigation, the issue shall be submitted to arbitration. In such event, the State Engineer and ETSI shall each appoint an arbitrator, and the two appointees shall select a third arbitrator. The three arbitrators shall decide whatever issues cannot be agreed to between the parties, and a decision by a majority of the arbitrators shall be conclusive and binding upon the parties. If either the State Engineer or ETSI refuses to appoint an arbitrator, or the

against using water form the Madison could soon be history. Although ETSI representatives originally thought that only Madison water could be used, because the Madison is written into Wyoming legislation on ETSI, alternative water sources are presently being sought. As a result, in the latter part of May of this year, South Dakota and Wyoming, through the South Dakota governor and an ETSI task force, agreed to try to find a way to use water from the Oahe Reservoir in South Dakota, and there is plenty of water in the reservoir.

The idea of using Oahe water is not a new one. It has been discussed for five or six years. But the South Dakota legislature was opposed to using that water for some time. Now, if ETSI uses Oahe water, it will not only solve ETSI's problems with Wyoming ranchers, but can also provide water to western South Dakota, through outlets in the water pipeline from Oahe to the pipeline terminus at Jacobs Ranch, according to South Dakota's governor, Bill Janklow.

One other major pipeline, that proposed by the Sheridan-Little Horn Water Group, would use water from the Wyoming side of the Little Big Horn River (to the east of the Big Horn River, in Sheridan County). However, the Little Horn flows into the Big Horn, and the Big Horn River is currently being litigated by the Crow and Northern Cheyenne Indian tribes. The Indians claim the water has belonged to them since time immemorial, and they don't want to give it up. Although objections to using this water are very similar to the objections to using the Madison water, until the litigation is completed, those objections can be considered secondary issues, and the litigation is likely to take many years.

If the water issues are settled satisfactorily for both pipeline companies and existing water users in the state, there are still environmental objections to coal slurry pipelines which could be raised. It is likely, however, that the overwhelming sentiment would be to overlook these further objections, if the water problems were solved.

The main objections, other than water, were outlined in the letter from Jon Huss, cited earlier, and in a statement issued by

Beneficiary Agreement Excerpt

two so appointed cannot agree on a third arbitrator, then either party to this Agreement may request a Court of competent jurisdiction to enforce the provisions of this paragraph. The cost of arbitration as well as the cost of any investigation shall be paid for by ETSI. The State Engineer or the arbitrators shall utilize all relevant data, including available monitoring data provided by the United States Geological Survey, in making their findings and determination. If, after a public hearing and investigation, the State Engineer determines that interference with the complainant's pumping has been caused by ETSI, he shall find and determine what corrective measures shall be taken by ETSI, which measures shall include the following, or any combination thereof:

(a) An order requiring restoration of complainant's pumping so that complainant can extract from the Madison Formation a quantity of water equal to the amount pumped before such interference. If the complainant's pumps must be lowered, his well(s) deepened, or a new well or wells constructed in order to enable complainant to pump such equivalent quantity of water from the Madison Formation, ETSI shall pay any and all costs of deepening such well(s) and lowering the pump(s) or constructing a new well or wells and providing new pumps, and ETSI shall also pay such additional pumping costs as may be required by order of the State Engineer.

(b) An order requiring ETSI to supply to said complainant, in the event complainant's pump(s) cannot be lowered, his well(s) deepened, or a substitute well or wells and pumping plant constructed, substantially the same quantity and quality of water enjoyed by complainant prior to interference by ETSI pumping and at a cost to said complainant equivalent to the operation and maintenance costs paid by complainant prior to interference with his pumping. In the case of preferred users [the cities of Newcastle, Upton, Moorcroft, Osage, Gillette, Sundance and the Devil's Tower National Monument, plus one 'new city' to be designated by the State Engineer. —Ed.], ETSI may at its option, and with the concurrence of the State Engineer, appropriate the wastewater of any such preferred user and either (1) spread or inject said preferred user's wastewater into the underground in order to satisfy ETSI's substitute water supply requirement in whole or in part, or (2) utilize said preferred user's wastewater for ETSI's own benefit and use.

(c) In the event that ETSI's interference with any complainant's pumping cannot be corrected by any of the measures prescribed in Subsections (a) or (b) hereof, the State Engineer shall, before invoking the provisions of Subsection (d) hereof, permit ETSI to correct such interference by whatever supplies, means, or technology available at that time, subject, however to the approval of the State Engineer.

(d) An order of the State Engineer requiring ETSI to cease and desist all its pumping from the Madison, in the event that ETSI's interference with any person's pumping cannot be corrected by any of the measures prescribed in Subsections (a), (b), or (c) hereof. ETSI shall comply with such order to cease and desist no later than twenty-four months after receipt of said order.

(From an "Agreement between the Office of the State Engineer of the State of Wyoming (State) and Energy Transportation Systems, Inc. a Delaware corporation qualified to do business in Wyoming (ETSI), dated September 24, 1974.)

the Environmental Law Forum, University of Wyoming College of Law, on February 12, 1981. Some of these objections are discussed below.

Huss, responding to the DEIS on ETSI, but with arguments applicable to all pipelines, wrote about the following (Huss' comments have been condensed by *Wyoming Issues*).

1) It must be substantiated that slurry lines would have an economic advantage over railroads.
2) The costs of returning water to Wyoming via an additional pipeline should be thoroughly examined.
3) The energy efficiency of slurry pipelines has not been adequately proven. References are made here to the Black Mesa, Arizona, pipeline, and the Environmental Protection Agency's 1978 study of this pipeline, which shows energy losses in slurry pipelines to be significant. Mention is also made of the fact that dewatered coal does not burn as efficiently as coal which has never been watered.
4) The DEIS is not clear on the number of additional railroad workers which would be needed in lieu of the pipeline. There are inconsistencies in reporting numbers. (Huss appears to be questioning which impact would be greater – that of the railroads' expansion or that of the pipeline.)
5) ETSI will be duplicating all but one market now served by railroads, which appears to Huss to be energy-inefficient.
6) Impacts on streams, rivers and wetlands have not been discussed thoroughly enough. ETSI plans to cross 50 or more rivers. (Stickley says ETSI will avoid rivers and wetlands. He does not, however, clarify what would occur in case of a spill.)
7) The DEIS says both that ETSI "would contribute to energy production in a manner that minimizes the environmental impacts," and that the all-rail alternative would not require significant disruption of land or consumption of water, that

The Sheridan-Little Horn Water Group

There are other pipelines than ETSI proposed for Wyoming. These include the Powder River Pipeline, which would deliver coal from Gillette to Chicago or Duluth; a pipeline which would deliver coal from the Gillette/Colstrip, Montana, area to Long View, Washington; and the Sheridan-Little Horn Water Group, discussed below.

The Sheridan project was originally proposed as a joint venture by TR12, a Wyoming partnership, and Texas Eastern Pipeline Company (which recently bought United Energy Company's share of ETSI). They proposed to build a series of high mountain reservoirs and a diversion facility on the Wyoming side of the Little Big Horn River, and pump the water to a number of coal mines in Montana and Wyoming, depending on who contracted for the water.

The original plan called for mining coal in Montana and Gillette, and shipping the combined slurries to Houston. In other words, this pipeline originally planned to nearly geographically parallel the ETSI line. However, this plan was never enacted because the governor failed to give it the necessary approval.

In 1980, the Sheridan group had no firm contractual arrangements, and was hoping to simply get the necessary permits to export the water. Once it had those permits, it would be easy to make contractual arrangements to deliver the coal, this time to the Dallas-Ft. Worth area. Also, San Antonio Municipal Power and Light, which buys all its coal from the Sun Cordero mine in Gillette, was interested in the Sheridan project. However, Texas Eastern dropped out of the partnership in 1980, and TR12 tried to run the project alone. TR12 could not get a bill introduced into the 1980 budget session of the legislature, though, so it failed to get the permits it needed.

The Sheridan group has also proposed that, if they could not market in Texas, they would build to southcentral Minnesota, where there are quite a few power companies which serve the Midwest and use Wyoming coal to do so.

One of the Sheridan group's selling points is that it would provide a broader tax base in Sheridan County, which is presently plagued with high numbers of people who live in Sheridan County but work in Montana. Thus, capital facilities' taxes and other revenues are collected by the state of Montana, rather than Sheridan County. The Sheridan group says that its project will be taxable, that it will sell excess water to communities at cost, and that it will pay a tax of $100 per acre foot of exported water. Furthermore, the Sheridan group proposes to maintain minimum streamflow to protect Little Horn fish and other aquatic life. Despite all these promises, the people of Sheridan County do not like the project, for the same reasons that people do not like ETSI. Also, environmentalists say that there will be bona fide impacts if there are reservoirs built on the Little Horn, which is the home of a lot of wildlife.

Warren White, the governor's natural resources advisor, has doubts that any of these proposed pipelines will actually ever start pumping coal slurry. He says that ETSI and Sheridan-Little Horn will be tied up with litigation for so long that the energy companies with which they plan to contract will not be able to wait for coal any longer. These energy companies will then have to renegotiate with the railroads, for long-term contracts, and will, in effect, wipe out the pipeline market. White speculates that the other pipeline companies are waiting to see what happens with ETSI. If ETSI makes it, other pipelines may follow. If not, Wyoming may never see a coal slurry pipeline in operation.

rail lines already serve the markets to be served by ETSI, and that rail lines would require neither new transmission lines nor electrical generation facilities. Huss says, "Since both the all-rail and slurry alternatives accomplish the same end coal transportation goals, the proposed action [ETSI] can in no way be claimed to 'minimize' the environmental impacts."

8) ETSI will require 88 miles of new electrical transmission lines in Wyoming, and will need far more electricity than the peak demand anticipated by the power plant which will supply ETSI, Tri-State Generation; in fact, ETSI will need more than double the peak demand of 19 megawatts. Another generating plant may have to be built just to support ETSI.

9) The coal market is currently depressed, and the demand for Wyoming coal may not justify the existence of slurry lines.

These additional comments, also condensed, were put forth by the Environmental Law Forum:

1) Presuming a non-depressed coal market, the demand for Wyoming coal could significantly increase coal mining in the state, and, therefore, increase the impact felt by Wyoming communities through mining activities.

2) Wyoming should have long-range plans concerning energy development, which it does not have at present, encouraging the "least-injurious directions."

It is evident from all these arguments — transportation, water, and environmental concerns — that coal slurry pipelines are complicated. Emotional opinions will not settle the issue — it does little good to speak of the "soothing clickety-clack of trains," "those reactionary environmentalists," or that "they're going to dry up every well in Niobrara County." Each of us should consider every argument and fact put forth by every pro and con slurry line individual or group in the state, before deciding that coal slurry pipelines are good or bad.

Glossary of Water Terms

Aquifer—A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs. See also *ground-water reservoir* and *ground-water system.*

Capture—The decrease in water discharged naturally from a *ground-water reservoir* plus any increase in water recharged to the reservoir resulting from pumping.

Confined aquifer—An aquifer in which ground water is confined under pressure significantly greater than atmospheric pressure; artesian conditions. Synonym: artesian aquifer. See also *unconfined aquifer.*

Discharge area—An area in which subsurface water, including both ground water and water in the unsaturated zone, is discharged to the land surface, to surface water, or to the atmosphere.

Ground-water reservoir—All rocks in the *zone of saturation.* See also *aquifer.*

Ground-water system—A ground-water reservoir and its contained water; includes hydraulic and geochemical features.

Head—The height above a standard datum of the surface of a column of water (or other liquid) that can be supported by the static pressure at a given point.

Mining—In reference to ground water, withdrawals in excess of natural replishment and capture. Commonly applied to heavily pumped areas in semiarid and arid regions, where opportunity for natural replinishment and capture is small. The term is hydrologic and excludes any connotation of unsatisfactory water-management practice. See, however, *overdraft.*

Optimum Yield—The best use of ground water that can be made under the circumstances; a use dependent not only upon hydrologic factors but also upon legal, social and economic factors.

Overdraft—Withdrawals of ground water at rates perceived to be excessive, and therefore an unsatisfactory water-management practice. See also *mining.*

Potentiometric surface—An imaginary surface representing the static head of ground water, of which the *water table* is one type.

Recharge—The process of addition of water to the *zone of saturation.*

Safe yield—Magnitude of yield that can be relied upon over a long period of time. Similar to *sustained yield.*

Sustained yield—Continuous long-term ground-water production without progressive storage depletion. See also *safe yield.*

Unconfined aquifer—An aquifer having a *water table.* Synonym: *water-table aquifer.* See also *confined aquifer.*

Water table—The surface in an *unconfined aquifer* at which the pressure is atmospheric. It is the level at which water stands in wells that penetrate the uppermost part of an aquifer. See *potentiometric surface.*

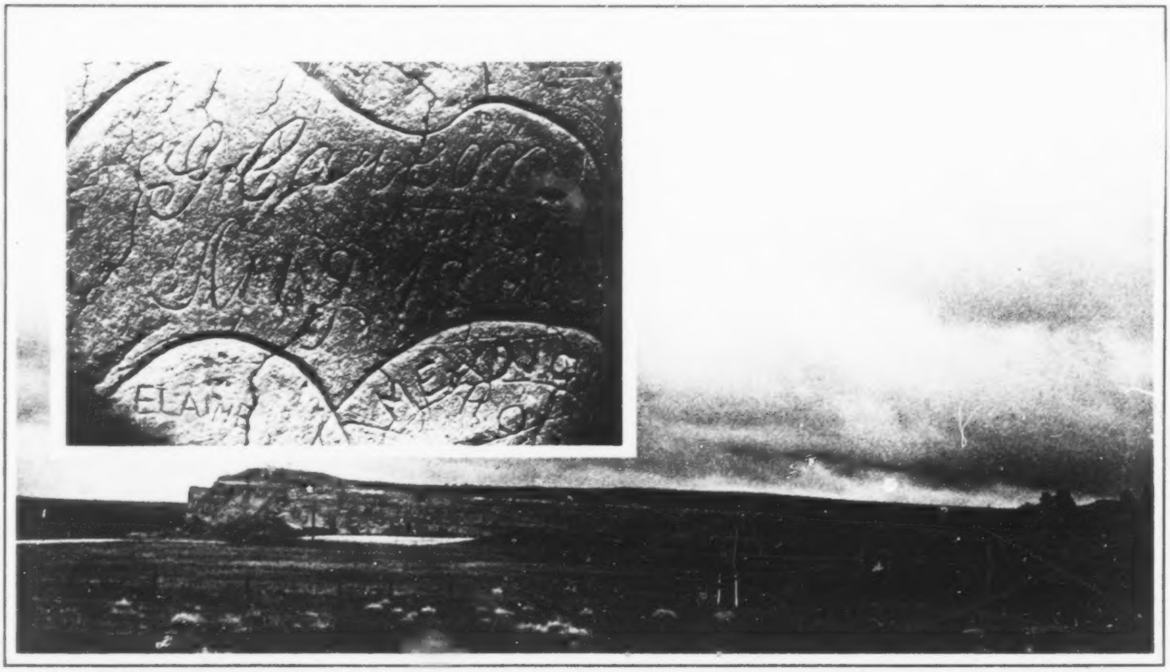
Water-table aquifer—See *unconfined aquifer.*

Zone of saturation—A subsurface zone in which all the interstices are filled with water under pressure greater than atmospheric. The upper surface of the zone of saturation is the *water table.*

From: *Essentials of Ground-Water Hydrology Pertinent to Water-Resources Planning,* U.S. Water Resources Council, Hydrology Committee, Bulletin 16 (revised), pp. 31-33.

An armchair travelogue of the Mormon Trail.

The Mormon Trail—1847 and 1981



Register Cliff, near Guernsey, Wyoming, was a popular stop for the migrating Mormon pioneers. Thousands of names and dates, such as the one pictured here, can be found carved in the cliff's soft stone.

Text and Photos by Becky Eddins Woodcox

The bitter cold of the morning, February 4, 1846, was uninviting, yet despite the snow, wind and near zero temperatures, the Nauvoo ferry dock was bustling with activity. One by one, heavily loaded, oxen-drawn covered wagons were guided aboard the flat bottomed ferry, floated across the dangerously ice-clogged Mississippi, and deposited, with their passengers, on the opposite bank. Hundreds of Mormon families lined the road to the ferry and crowded the riverbank. Braving the cold, men, women and children stood beside their wagons, waiting for a turn to board the ferry. As they anxiously waited, the wind penetrated their thick clothing, numbing their bones. "The worst part was the waiting . . . a nagging apprehension over the unknown that lay across the river, past the boundaries of the United States, and the knowledge that to remain meant harm or even death only worsened [their] discomfort." (Joseph E. Brown, *The Mormon Trek West.*)

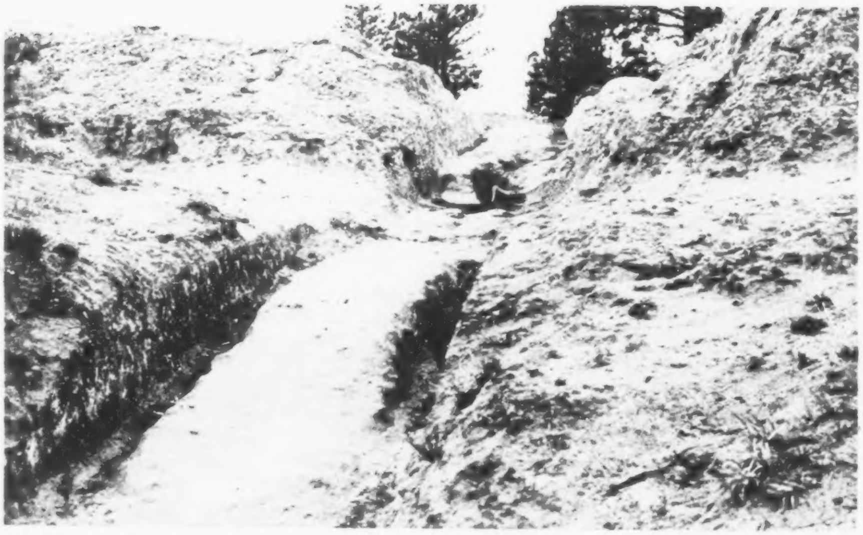
Although their task was wet, cold, muscle-straining, and dangerous, they diligently proceeded, knowing that this was only the beginning of many hardships yet to come. Once a dozen or more wagons had successfully crossed the river, drivers climbed aboard and directed the oxen across the snow-covered Iowa prairie toward a temporary camp situated on Sugar Creek, seven and a half miles from Nauvoo. Upon reaching the camp site, the wagons were halted, tents were pitched, and the first of the Mormon pioneers prepared for a cold stay until the others, waiting on the Nauvoo side of the Mississippi, could join them. Then the journey could continue; the route they would follow and their final destination was not precisely known.

Beyond the scene at the ferry stood the beautiful, prosperous Mormon city of Nauvoo, Illinois. Its citizens had enjoyed comfortable homes and a fine life. But in 1846, Nauvoo was far from peaceful. During the past months, anti-Mormon mobs had burned houses and haystacks, whipped and tortured innocent men, and voiced threats of increased violence if the Mormons continued to dwell in the state of Illinois. Finally, on September 24, 1845, their city near to destruction, Nauvoo's Mormon leaders signed a formal agreement promising to leave the next spring. But the mobs could not wait until then; Nauvoo's citizens were fleeing in the dead of winter. Where they would go to find peace, "God only knew."

The westward journey of the Mormon pioneers began on that cold February morning in 1846. Nearly 80,000 people, called saints by the Mormons, would make the trek across the plains to the Great Salt Lake Valley by 1868. Most would walk the entire 1300 mile trail to their final destination, leaving all they owned behind, except for what few possessions would fit into their covered wagons or handcarts. Their trail would wind through unsettled, unknown lands, and cross three future states Iowa, Nebraska, and Wyoming. And as they travelled, permanent reminders of their journey would be left behind as witnesses of their great feat, and the trail they followed would be given their name — The Mormon Trail.

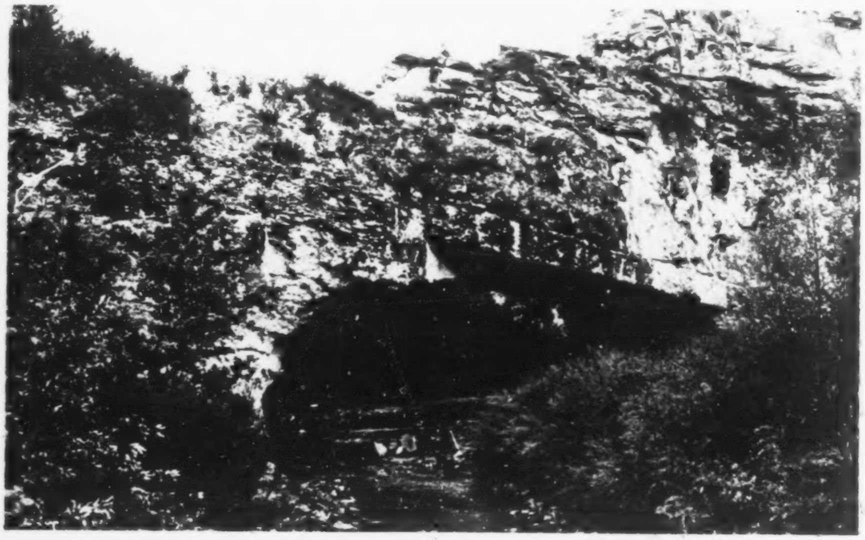
Nearly a month after the crossing of the Mississippi had begun, the last wagon reached the opposite bank. On March 1, the call was sounded, the pioneers directed their wagons away from the Sugar Creek camp, and the journey was at last resumed.

Across Iowa, the trail was nothing more than ruts and mud. The going was slow, rough, and tedious, and often no more than four or five miles would make up an entire day's journey. But they forged on. Along the Iowa trail, they paused to set up permanent settlements, build bridges and improve the road however, possible. "The Mormons were one of the most significant forces in the settlement of Iowa. The cabins they constructed at three permanent camps were not temporary shelters but buildings intended to endure. Before the Mormons, the trail across Iowa was but a faint trace . . . afterward, it was a permanent route, with bridges flung across rivers and roads improved." (Brown).


These wagon ruts, the most distinct along the trail, are located in the Guernsey area. The thousands of pioneer wagons that passed over the trail gradually cut ruts nearly four feet deep in the rock.

It was well into July when the 1846 pioneers at last finished crossing Iowa, too late in the season to hope to reach their destination before winter came around. "The lateness of the season, the poverty of the people. . . compelled us to abandon any further progress westward till the return of another spring," wrote Parley P. Pratt. "The camps. . . began to prepare for the winter. 'West in the spring' became a rallying cry, a shout of hope."

The main body of the pioneers settled in Winter Quarters (now Florence, Nebraska) just across the Missouri River. Here they established one of the most important settlements along the trail. Thousands of migrating Mormons would lay over here during the winters and wait until spring to resume their westward journey. In 1846, nearly 15,000 pioneers were scattered across the Iowa trail, from Sugar Creek to Winter Quarters, and were forced to face the oncoming winter.


Natural Bridge, a rocky arch rising thirty feet above the water, was a well-known Mormon Trail landmark. Today, the site is a designated state park.

On April 16, 1847, the first "Pioneer Company," the trail blazers, set out from Winter Quarters with Brigham Young as their leader. The departure from Winter Quarters was orderly and made with careful preparation, in contrast to the hasty flight from Nauvoo. Wallace Stegner, in his book *The Gathering of Zion*, described these first pioneers as "picked men, well supplied, well armed, and well led. . . ."

William Clayton, official record keeper of the pioneer company, recorded in his journal on the day of departure:

> ". . . at 2:00 p.m. the camp started out to proceed on the journey. . . . There are 143 men . . . [in] the pioneer company, three women and two children. . . . There [are] 72 wagons, 93 horses, 52 mules, 66 oxen, 19 cows, and 17 dogs and chickens . . . who have started to go west of the mountains to find a home where the saints can live in peace and enjoy the fruits of their labors."

Across Nebraska, the pioneers followed the north bank of the Platte River, paralleling the Oregon Trail, which

Fort Caspar was the site of the famous Mormon Ferry. Today, the ferry site is designated by a marker at the restored fort.

followed the south bank. The Platte Valley became their lifeline, with its grasslands providing invaluable feed for the stock, and its water sustaining life. Antelope and deer were abundant, and fish were easily caught along the river. "To many pioneers, however, the Platte Valley was merely a place to endure, to pass through on their way to some where else . . . it seemed as bleak and worthless as any barren area of the world. Except by Indians, it was scarcely settled. . . . To the Mormon Saints, however, it was a path to Zion. . . . They noted every waterhole [and] river crossing with infinite detail, for they knew they were only an advance guard of thousands of other saints to follow." (Brown).

Only minor difficulties were encountered as the pioneers travelled the trail across Nebraska, and, when compared to the journey through Iowa, they proceeded onward very successfully. Along the Nebraska trail, the pioneer company entered buffalo county. "No entries in the [pioneer] journals between Winter Quarters and Fort Laramie seem as repetitive as those concerning buffalo, and [their] astonishment at seeing the Plains' great beasts for the first time [was] evident." (Brown). "The prairie looks black with them, both on this and the other side of the river. Some think we have passed fifty, and even a hundred thousand during the day. . . . It is truly a sight wonderful to behold . . . ." wrote Clayton in his May 6 entry.

By May 31, the pioneers had left Nebraska and crossed over into what would become the state of Wyoming. The next day, June 1, the company sighted Fort Laramie, which Clayton figured to be "531 1/4 miles from Winter Quarters. The camp [is] generally enjoying good health and good spirits." In 1847, Fort Laramie was partially in ruins, but to the Morman pioneers, it was an "oasis in the wilderness." The old fort stood about two miles from the south bank of the Platte, and as the westward migration continued, many pioneers would come to depend upon the supplies that could be acquired there. At Fort Laramie, the pioneers were informed that they could no longer continue their journey along the north bank of the Platte. ". . . We learned that we cannot travel over four miles further on the north side . . . before we come to bluffs which cannot be crossed with loaded wagons," Clayton wrote. "The road is better on the [south bank] than the one we have travelled, it being hard and not sandy." The Mormon Trail would now merge with the existing Oregon Trail.

Ferrying the Platte began the next morning. Using a boat rented from Fort Laramie, ". . . the crossing was a snap. . . . It was organized into two divisions, Brigham Young leading one and John S. Higbee the second. To keep the job moving briskly, Brigham pitted the two divisions against each other, and at one point the spirit of competition was moving the wagons across at a rate of less than twelve minutes each." (Brown). The ferrying was halted by a severe hail storm, otherwise, "all the wagons would have been taken over [easily] today. . . ." wrote Clayton.

As the pioneers departed from Fort Laramie, Laramie Peak was sighted in the distance, and after the flat barren land of the Nebraska Plains, the rugged mountains were a welcome change of scenery. But as the journey continued, signs that the saints would be entering rugged mountain country soon appeared. The grade became steeper, and the trail was covered "with uneven rock, which shakes and jars the wagons very much. In one place there is a little descent and at the bottom a very sharp turn in the road over round rock . . ." noted Clayton.

That night, the pioneer company set up camp near "Register Cliff," a favorite landmark for many westbound emigrants along the trail. Those who stopped would

William Clayton thought the granite stones of Independence Rock looked as if "giants in by-gone days had taken them in wheelbarrows of tremendous size" and dumped them in piles. Independence Rock is the site of a proposed state park.

Clayton noted pools of water on top of Independence Rock, and after taking samples, decided the water "came from rainfall." From the top of the rock, one can see for miles in every direction.

often carve their names in the soft stone, telling by-passers that others had followed the same course.

For the first time in several days, the Mormons encountered other emigrants along the trail a group of Missourians headed for Oregon. The competition for the best camping sites was on, and for a few days, the pioneer groups both attempted to stay ahead of each other in order to reach the best place first. "We have travelled . . . 19 1/4 miles [today]. . . . We have a good place for feed. . . ." recorded Clayton.

By June 9, the pioneers were nearing Fort Caspar, the future site of modern-day Casper, but in 1847, Casper was merely a place to "seek a good river crossing."

"The Mormons knew that another hazardous crossing of the Platte lay only another few days or so ahead. This time they would cross it south to north to begin the main ascent into the "Rockies" (Brown). Anticipating possible delays and dangers with the crossing, Brigham Young sent an advance group of men ahead of the main company to begin constructing a raft and to "do whatever other work needed to be done to [prepare] for the crossing."

The company of Missourians also anticipated the crossing, and when they reached the bank of the Platte, they found the advance group of Mormons finishing work on their raft. "The Missourians bargained with the Saints to ferry their own supplies across; a price of $1.50 a load was agreed on . . ." (Brown). "They commenced [crossing] soon after, and received pay mostly in flour, a little meal and some bacon. They made $34.00 . . . all of which is a great blessing to the camp. . . . The Missourian company seems to feel well toward us and express their joy for having got across the river so soon," wrote Clayton.

Devil's Gate "is a chasm three hundred thirty feet deep, with the Sweetwater river running between the cliffs . . . [and] the river dashes furiously against huge fragments of rock," wrote Clayton. Today, Devil's Gate is located on private land.

On June 14, the pioneers prepared to challenge the crossing of the Platte. The Missourians were across, and now it was their turn. But the crossing was much more difficult than it has been the day earlier. The river "was swollen by summer rains," making the crossing risky. Yet the pioneers "commenced at 5:00 in the morning and in four hours [they] had landed eleven wagons . . . on the north shore." Taking only one wagon across the river at a time was slow, but safest. By the end of that first day, only twenty-three wagons had been successfully crossed, ". . . after a very hard day's labor. . . . The wind blows from the southwest which is much to our disadvantage," reported Clayton. "At 3:30 we had a very heavy thunder storm. The rain was heavy indeed, accompanied by hail and as strong a wind as I ever witnessed." It took the pioneers three more "weary" days before the last wagon was safely across.

"Although the job had taken longer than anticipated . . . it was accomplished without serious mishap. The Saints had become skilled river crossers, and the tidy profit reaped from the Missourians gave Brigham an idea. Why not leave a small detachment at the site to help future emigrants across. . . . That was the genesis of the famous 'Mormon Ferry,' which remained in business near Fort Caspar for many years" (Brown).

Finally, on June 19, the pioneer company headed off from the Platte for the last time. It was as if they were parting from an old friend. For the next several days, the pioneers would travel terrain that Clayton later described as "the worst of the entire journey. The whole country around is entirely destitute of timber, not a tree to be seen, nor a shrub larger than the wild sage which abounds. . . ." Besides there being no timber, there was no water. ". . . We had been in hopes of reaching the Sweetwater, but it appears we are yet some distance from it." Ahead, two small streams of water were sighted, but the water of both was "so bad the cattle will not drink it. It is strong or rather saleratus . . . this place looks swampy and smells bad," wrote Clayton.

The area encouraged the pioneers to move on as rapidly as possible. That day they travelled 21 1/2 miles before stopping to make camp the longest day's march since leaving Winter Quarters.

The next day, June 21, dawned much more hopeful. At last the company reached the Sweetwater River. The company also passed two famous Oregon Trail landmarks, Independence Rock and Devil's Gate. "The quality of the water improved immediately, wood was more available, and the spirits of the emigrants began to soar. . . . The Sweetwater was to be their new friend." (Brown).

The pioneers continued their journey, struggling through deep sand near Jeffrey City. "Despite the hard going . . . [we] made seventeen miles before camping. . . ."

South Pass lay ahead of them now. ". . . We were suddenly cheered with a very plain view of the Rocky Mountains towering high up in the air and perfectly white with snow," Clayton reported. The weather was cool but pleasant for the pioneers as they began the upward climb. "We climbed . . . [a] high range of hills over a good road, gently rolling." The saints travelled on, often finding snow in the shade along the trail. Wilford Woodruff measured snowbanks that "were ten feet deep."

Orson Pratt placed the altitude at the top of South Pass at 7,085 feet, an extremely accurate figure, and Clayton figured the distance from Fort Laramie to be 280 1/2 miles. Here the Saints crossed over the continental divide, and Woodruff noted that "for the first time in my life [I have] tasted water running into the Pacific."

Pioneer journals noted that Split Rock could be seen for "two days journey" coming toward and going away from the mountain. Today's traveller can spot the split in the rocky mountain miles before actually reaching it.

After leaving the mountains of South Pass, the pioneers were once again into barren land. Modern-day travellers can see the trail winding through the sage brush.

From South Pass, the pioneer company entered into another stretch of barren land. Water and grass were scarce, and, to make matters worse, many of the men were stricken with mountain fever. It was with relief that they reached the Green River. "The river was a pleasant place . . . [with] many patches of wild apple trees," Clayton noted.

On July 1, the emigrants began crossing the Green River, and sucessfully completed the task the next day. The saints continued rolling, expecting to reach Fort Bridger soon. In his journal entry of July 7, Clayton reported that the pioneers had reached Fort Bridger ". . . which [is] 397 miles from Fort Laramie." He described the fort as not very impressive, but "pleasingly situated." It was the "final outpost of civilization" the saints came upon before trudging the last and toughest hundred miles to "Zion." The Mormons purchased the fort in 1855, and it played an important part in their history.

Seventeen days after leaving Fort Bridger, 111 days since departing from Winter Quarters, the first pioneer company entered the Salt Lake Valley. Their journey had ended there without a single fatality they had found their home.

Fort Bridger was the pioneer's last stopping place before reaching "Zion." The fort has been restored to look much as it did during the pioneer migration period.

Many historians write of the uniqueness of the Mormon migration. Of all the thousands of emigrating pioneers during that period of history, the Mormons were the only group travelling by "force," not by choice. "These were not groups of young and reckless adventurers," wrote Wallace Stegner, "nor were they isolated families or groups of families. They were literally villages on the march, discipline unheard of anywhere else on the western trails. . . ."

The Mormons turned their trail into a two-way trail "to an extent that neither the California nor the Oregon Trail was. It saw a steady traffic . . . and a constant flow of wagons and strong teams going back to pick up supplies and new converts at the Missouri, or to meet companies faltering along the way.

"Few California or Oregon emigrants gave a thought to people coming after them, unless they feared a company behind them might pass them and use up the grass. There are recorded instances of their destroying rafts and ferries to prevent their use by other groups. Not so the Mormons. The first thought of the first pioneer company was to note good campgrounds, wood, water, grass. . . . They and succeeding companies bent their backs to build up bridges and dig down the steep approaches of fords. They made rafts and ferry boats and left them for the use of later companies and twice left men behind [to operate] them.

"By the improvements they made in the trail," Stegner wrote, "the Mormon pioneers earned the right to put their names on the trail they used" – the Mormon Trail.

VIEWPOINT

by Congressman Dick Cheney

Wyoming's Congressman, Richard Cheney. Photo courtesy of Congressman Cheney's office.

The new Administration in Washington has managed in just a few short months to completely reorient the psychology of the federal budget process. Politicians formerly adept at adding federal programs on top of federal programs and repeatedly upping the national debt to finance them have quickly adapted to the new austerity. Now, they try to outdo each other with new schemes to balance the budget.

Remarkable progress has been made in recent weeks toward curbing government spending. Cuts of more than $50 billion in some 330 government programs have been recommended, and many federal activities that would be considered luxuries even in the best of economic times are finally receiving the scrutiny they have long deserved.

But even with these massive spending reductions, the 1982 budget still will be higher than the 1981 budget and we are still only talking about slowing the rate of growth in spending a fact which reveals the frightening dimensions of the overspending problem. To reach the desired goal of balancing spending with income, even bigger reductions will be necessary, and more activities will have to be eliminated. The toughest decisions still lie ahead.

An important area where further savings can be realized, both for the federal government and for private citizens, is reform of the regulatory system. The annual cost of the federal regulatory burden is at least $103 billion about $470 for every man, woman and child in the United States, or about as much as the average person spends for energy in a year.

Some federal regulations are, obviously, necessary. But horror stories about regulatory overkill abound:

In California, citizens served by two electric utility companies are paying $1 million a day more than they need to for electric service because of federal delays in licensing of nuclear power plants that could provide power more cheaply.

Studies conducted in Colorado, New Jersey and Missouri found that regulatory requirements add between $1,500 and $2,000 to the cost of a new house.

In Wyoming, more than seven years have passed since the City of Cheyenne first applied for a permit to pipe water across a piece of the national forest to the residents of Cheyenne. Today, the federal government is still "studying" the proposal, and Cheyenne is still waiting for its permit. Meanwhile, seven years of rising inflation have driven the estimated cost of this water project to double the original amount.

Five million small businesses spend over $20 billion a year to shuffle paper for the federal government. It is estimated that as much as 25 percent of hospital costs is due to various government regulatory requirements. Since 1968, government-mandated safety and environmental equipment on automobiles has added almost $700 to the price of a car.

Millions of hours of people's valuable time is spent filling out government-required forms: income tax forms, radio broadcast logs, annual reports, quarterly reports, applications, and income verification forms. Two billion sheets of paper flow to Washington every year enough to stuff every football stadium in the country. A recent application for federal approval of a new arthritis drug was 120,000 pages long and weighed more than a ton!

The average citizen will benefit in several ways if the new Administration and Congress succeed in getting rid of unnecessary federal regulations. First, the direct cost to the federal government of the regulatory process some $43 billion a year will be lowered, which will help achieve the goal of balancing the budget. Second, the direct cost to those who are regulated, which is estimated to be more than $60 billion and is passed on to consumers in the form of higher prices for goods and services, will diminish. And, third, private and public resources now consumed by unnecessary and burdensome government regulation will be freed up for more productive uses, thus providing economic stimulation, greater productivity and new jobs.

Vice President Bush and several members of the President's cabinet have formed a task force to identify unnecessary federal regulations so that they can be eliminated. In the Congress, legislation has been introduced in both the House and Senate to streamline the regulatory process.

The Regulatory Reform Act of 1981, which I have cosponsored, would amend the basic authority for regulation the Administrative Procedures Act to require periodic review of regulations, permit judicial review of agency interpretations of laws, and force agencies to consider the cost of new proposals.

Congress also needs to take a new look at many existing environmental and regulatory statutes to identify ways of easing the regulatory burden without abandoning important and necessary safeguards.

Regulatory reform must be part and parcel of the new drive to get the national economy back on track.

How Federal Budget Cuts

If you've been wondering why the streets in your town haven't been repaired, or why the state's school system is in an uproar, maybe it's because of these proposed federal budget cuts.

At press time, the "in lieu of taxes" program was under consideration for full renewal, so the comments in this article about that program, and the expected loss of funding, may no longer hold true.

by Sheila Nyhus

One of the primary goals of the Reagan Administration is to put the federal budget in the black, and budget cuts have been proposed to achieve this goal. Wyomingites views on President Reagan's proposed budget cuts and a balanced federal badget range from optimism to pessimism. Some are looking forward to "getting the Feds off our back" (See Congressman Cheney's "Viewpoint" editorial for further discussion of this.) Many feel that the cuts are necessary, and a positive step toward improving the nation's and, as a consequence, Wyoming's economy. Others think we should not be turning to Washington for a handout, when there is mineral money in Wyoming that could be used for the needs of the state's municipalities. While the federal cutbacks are greater than they ought to be, some say, Wyoming is lucky in that it has a booming energy industry which could help soften the economic blow for some projects and programs.

There is also concern for those people for whom various federal programs make the difference between having a viable life or one of hopeless adversity. Some people have questioned whether the state, or groups of individuals, will have the financial ability or desire to help people with special needs who live in Wyoming. The state will no doubt try to help where it can, but millions of dollars are needed. In all probability, it will not be possible to fund all of the present programs. In the end, one wonders where the final cuts will fall.

Many of Wyoming's cities and towns may have to postpone or curtail plans for a variety of projects, as a result of federal budget cuts. In an effort to get a feeling for the effect such cuts will have on Wyoming municipalities, representatives of six city governments were contacted and asked where they foresaw the cuts taking place, as well as what such cuts would mean to their respective municipalities. The six municipalities contacted are Cheyenne, Rock Springs, Cody, Evanston, Encampment, and Baggs.

According to Mick Snapp, executive assistant to Cheyenne's mayor, there are four main areas in Cheyenne that may be significantly affected by the proposed

Children like these may no longer be enrolled in the federally-funded School Lunch Program.

Photo by Linda Putnam.

May Affect Wyoming

federal budget cuts. These are street projects, a proposed bus system, city parks, and various service programs.

Cheyenne, like a number of municipalities in the state, has relied on Federal Urban Systems grants to help finance some of their street and highway projects. This source of funding is expected to be reduced greatly, or ended completely. Street work is an expensive item, and oftentimes cities do not have the revenues to pay for all the street work that needs to be done. For example, Jim Amen, State Highway Program Engineer, reports that the Prairie-Dell Range project for which funds have been committed is going to cost approximately $3.3 million. Of that amount, a Federal Urban Systems grant will pay $3 million. If federal funding for future projects is lost, it is hoped that the Wyoming Highway Department will be able to step in, perhaps with funds generated by the severance tax.

In recent years, Cheyenne has been steadily working toward developing a city-wide bus transit system. In the past, there were federal subsidies available, which would finance 80 percent of the capital cost of setting up a city transit system. These subsidies would cover such items as buses and bus shelters, which, for a Cheyenne system, would entail approximately $800,000-$1 million, according to Snapp. In addition, the federal government would subsidize up to 50 percent of the actual operating cost. Operating cost is calculated at approximately $40,000 per bus per year. Cheyenne expected to have between 15 and 20 buses, for an annual operating cost of $600,000 to $800,000. These subsidies are on line to be eliminated. If that should happen, Mr. Snapp thinks it would end plans to implement a bus system in Cheyenne, which was scheduled to take place in two to three years' time.

The city's park and recreation system may be affected, as park improvements are often paid for with half federal, half city financing. In the March 28, 1981, issue of the Cheyenne *Eagle*, Jim Dow presented the views of Cheyenne Parks Director Dave Romero on the subject of federal funding cuts to municipal parks. Examples given in the article of how federal funds had been used previously included $250,000 for the Lions Park indoor-outdoor municipal swimming pool and $130,000 for additional improvements at Lions Park. Other city park projects half-paid for with federal funds were the new and renovated tennis courts at Holliday Park, nine Junior League baseball fields, Prairie View golf course, development of Mylar and Brimmer parks, and the Pioneer Park playground. During the 1980 fiscal year, the federal government provided $257,286 in funding for Cheyenne's parks.

How will parks fare under the federal budget cuts?

Potholes like these may be on the increase if federal funds for street repair are no longer available to Wyoming's municipalities.

The federal agency which has provided funding for municipal parks in the past is the Interior Department's Heritage Conservation Recreation Service. This agency was terminated on May 31 by the Reagan Administration, according to Interior Department officials. It is not known whether another agency will take over these functions, nor how much money will be available for local projects in the future. Without supplementary funding from a source outside the city, park improvements will proceed at a much slower rate than in previous years.

Proposed cuts in social services were also mentioned by Snapp as an action that will affect many different people. Some of the current programs which are in jeopardy in Cheyenne are rehabilitation programs for the handicapped, special education programs, and state supported day-care for low income families. Whether or not other sources of funding will be found to keep these important programs alive is unknown at present.

Reagan's recommended budget cuts were labeled "disastrous" for Rock Springs by John Fornengo, the city's Clerk-Treasurer. The greatest concern for Rock Springs is its municipal wastewater treatment system. The sewage treatment plant needs to be expanded so it can handle another million gallons of sewage daily. In addition, a new interceptor line needs to be constructed, and the collection network needs to be improved. The city has paid for a study to be done of its sewer system, at a cost of approximately $130,000. Rock Springs then applied to the Environmental Protection Agency (EPA) and received a 201 Sewer Grant to help with the next two phases of the sewer project. It is presently in Phase II, which is planning and designing the additions and changes required. Phase II is expected to cost about $550,000. Of this amount, 75 percent of the cost will be paid for by the EPA and the remaining 25 percent will be paid for by the city. The original and most extensive version of Phase III has been estimated to cost in excess of $6 million, and was expected to begin in October of this year. Originally, Phase III was planned to benefit both the incorporated and unincorporated areas of Rock Springs. It now appears that the EPA funding (75 percent) for Phase III will not be available, as the EPA 201 Sewer Grant program is to be discontinued, and many areas which have received funding for the first or first and second phases will receive no more money. Some areas, however, do expect to receive further funding.

Rock Springs' response has been to cope as best it can. In planning its 1981-82 fiscal year budget, it has not included the EPA funding for Phase III of the sewer project. Instead, local funds will be used for the project. In order to do this, some projects will have to be eliminated, and funds for other city projects will be cut. In addition, the unincorporated residential areas to the north and west of Rock Springs will not be allowed to hook on to the city plant, as originally planned, unless these areas can come up with a share of the project cost (approximately $2 million). Fornengo says it is highly unlikely that these two areas will be able to raise the money necessary to insure their participation in the project. While these people will be hurt the most directly by the loss of federal funding, all of the residents of Rock Springs may lose as a result of cuts to other city projects and programs to provide the necessary funds lost when Phase III monies are discontinued.

According to Jay Brown, Cody's Assistant Clerk-Treasurer, there is not much concern in Cody at this time over the proposed federal budget cuts. While Cody is in Phase I of an EPA 201 Sewer Grant, it expects to be funded for the next two phases as well. In addition, the Federal Aviation Administration (FAA) is funding 85 percent of current airport improvements in Cody. Estimated cost of the improvements is $455,000. The future availability of these funds is in question, and Mr. Brown expects the city would turn to the state for help if FFA funds were no longer available.

In Evanston, as in Rock Springs, concern was expressed by Steven Snyder, city administrator, over the loss of EPA 201 Sewer Grant monies. Phase I (the study) has been completed, and the funding for Phase II (design) has been committed. The funding for Phase III (construction, $6-8 million) is in question, and Evanston is starting to consider alternative sources of funding. The city has mentioned the problem to the energy companies in the area, and sees the companies as a potential source of help. Evanston is especially hard pressed, as its sewer system is at capacity now, and its population growth is accelerating rapidly.

Other areas of concern for Evanston are its Senior Citizen Housing and its Parks and Recreation program. The city had planned to apply to Housing and Urban Development's Section 202 program for help in building housing for senior citizens. This funding source may soon no longer exist, and, consequently, needed housing will not be built. As a rapidly growing town, Evanston has an increasing need for park and recreation facilities for its citizens. On April 28, 1981, the Casper *Star-Tribune* ran an article on federal funding cuts to community parks. In the article, Harold

Petersen, Wyoming Recreation Commission's Director of Communication, said that such funding cuts will deal the worst blow to the state's impacted communities because they have the greatest need for parks and recreation areas to serve their expanding populations. With many other needs which must be addressed, it is likely that, without outside funding, Evanston's parks will not receive the attention needed to make them a viable outlet for the town's inhabitants. The commonly heard boom town statement, that there is "nothing to do but go to the bars," will no doubt continue to be heard.

Necessary sewer and drain systems may not be installed as needed without federal assistance.

Encampment, a small town with a growing population, faces many of the same problems as its larger cousins in the state. According to the town's Clerk-Treasurer, Morna Milliken, the foremost project in jeopardy is the replacement of old water pipes throughout the town. Encampment is in the process of building a new water storage tank and a filter system. When these have been completed, many of the old water pipes in town will need to be replaced, because they will not be able to stand the increased water pressure. The cost of such a project is not presently known. Originally, the funding for the engineering study, necessary for the laying of new pipes, was going to be provided by the Old West Regional Commission. The Reagan Administration is planning to eliminate all regional commissions by October 1, 1981, and Encampment will in all probability have to find another source of funding.

Another concern for Encampment is its sewer project. Encampment and Riverside (one mile away) have been working together to improve their sewer collection network and expand their sewer lagoon. The two towns have received an EPA 201 Sewer Grant, which is paying for 85 percent of the total $19,500 cost of an engineering study to determine which type of sewer system is needed. As in other municipalities, further EPA funding for design and construction is now in question. Encampment and Riverside are optimistic, however, about their chances to retain funding from the EPA. This is because, in the past, the towns' sewer situation has been a high priority concern. Also, Milliken thinks that there is an underlying sentiment to use what money there is to fund small towns, which do not have many sources of revenue.

Although Baggs has a number of ongoing projects, Joyce Chastek, the town's Clerk-Treasurer, expressed concern over the proposed federal budget cuts to Baggs' new rural health clinic. The clinic celebrated its first year of operation this past May. Until the establishment of the Noyes Health Care Center, the closest medical care available to the 1500 inhabitants of the Little Snake River Valley was 40 miles south, in Craig, Colorado. As can be imagined, there were times when the distance was too great, or the roads were impassable, and needed health care could not be obtained.

The dream of readily available health care for these people has been a reality for a year. Now, it is being threatened by the probable demise of the Old West Regional Commission, which awarded the clinic a grant of $114,000, the entire amount needed for its first year of operation. According to Don Kennedy, assistant dean of the University of Wyoming's College of Human Medicine, it usually takes two years for a clinic of this type to become financially self-sufficient. The clinic has asked Old West for another year's funding, and the request had been approved, pending availability of funds. It now appears that such funds will not be available. According to Kennedy, the people in Baggs who worked so hard to establish the clinic will not let it go easily. Alternative sources of funding, such as from the large energy companies located in the area, state funds, or local fund-raising, are being investigated.

There are other federal budget cuts which will affect the people of Wyoming. One of the biggest of these is education. The Reagan Administration has proposed that federal aid to elementary and secondary schools be cut by 25 percent. While education-related programs make up only 2 percent of the total federal budget, almost 10 percent of the total budget cuts is being taken from education. In Wyoming, the federal government contributes approximately $21 million annually to the state's school system, which had a total expenditure of nearly $255 million in 1979-80. A 25 percent cut would reduce the federal contribution to $15,750,000 a year. In addition, the present administration' plans to consolidate 57 educational programs into two block grants, to be administered by state agencies and local school districts. The federal funds for these 57 programs are slated to be cut by as much as 25 percent. The cuts would trim these programs, consolidated into the two block grants, by $2 billion or more. The League of Women Voters is one of the organizations that is opposed to this plan, as it removes federal safeguards which protect equal access to education for all.

Slated to be consolidated into the two block grants are categorical education programs that address specific needs, such as teaching the handicapped, improving school libraries, and running teacher centers. Teacher centers have been called "one of the most unregulated, cost-efficient, and successful" education programs by Mary Futrell, National Education Association (NEA) Secretary-Treasurer. "This proven program," she adds, "which has been in existence for four years, may soon disappear, along with many other programs that are equally worthwhile."

Wyoming is one of 17 states which receive funding under the Hold Harmless Agreement, which is applied to states with low levels of population. In instances where funding is based on a per capita or per student rate, Wyoming and other states receive a set minimum amount which varies from one program to another. At times, this minimum amount has been twice as much money as would have been available without the agreement. Funding status under the Hold Harmless Agreement may be changed by the Reagan Administration. If so, some educational programs could face a 75 percent cut in federal funding, based on a 50 percent cut due to the loss of the agreement, plus the overall 25 percent cut in federal funding for education. Such a change could have serious consequences, unless the state makes up the difference.

Melvin Gillespie, Wyoming Assistant Superintendent for Administrative Services in the Department of Education, says that the two cuts seen as the most problematic for Wyoming's educational system are the school lunch program and the "in lieu of taxes" program as it applies to the educational system. These programs use federal funds only; no state or local money is involved. At present, the school lunch program in Wyoming costs the federal government between $3 and $4 million a year. The Reagan Administration proposes to cut this funding by 60 percent. In addition, Wyoming participates in the Commodity Program, whereby schools receive from the federal government surplus food purchased from farmers for use in school lunch programs. Presently, Wyoming receives approximately 40 train carloads of such surplus food a year. This program is to be cut by 80 percent, reducing Wyoming's allotment to about eight carloads.

Wyoming schools are not required to participate in the school lunch program. Even so, 330 out of 394 Wyoming public schools are participating in the program at the present time. Total enrollment at the participating schools is 93,159 students.

There are three fee categories for the school lunch program. Eighty percent of participating children in Wyoming pay what is called Full-Price, which averages 80¢. Another 6 percent pay at the Reduced level, which averages about 15¢, and the remaining 14 percent receive free lunches. Federal cuts to the school lunch program will make it difficult for many programs to contine. While 80 percent of the children will no doubt continue to have nutritious daily meals, what of the remaining 20 percent, who may rely on the school lunch program for their one truly nourishing meal of the day? Helen Wells, a former home economics teacher and current school lunch supervisor in Kentucky, was quoted in the April/May 1981 *NEA Reporter* as saying that she expects there will be a marked increase in behavior and learning problems with the loss of a nutritious noon meal program.

Mike Wiggams, School Food Services Coordinator at the Wyoming Department of Education, says Wyoming schools that presently have school lunch programs will have a number of alternative responses to the federal cuts from which to choose. They can 1) eliminate the program entirely; 2) change to a snack program where items are purchased individually; 3) raise prices and continue the lunch program; or 4) receive increased financial support from their school board out of the General Fund.

One part of the "in lieu of taxes" program is federal impact aid to school districts with tax-exempt federal land. Nationally, Reagan has proposed to cut the number of school districts receiving this aid from 3900 to 330. In Wyoming, 25 out of the state's 49 school districts receive federal impact aid. The Reagan budget would eliminate federal school payments in lieu of taxes for districts with less than 20 percent of their students living on military bases or other federal installations. In Wyoming, all but the three school districts on the Wind River Indian Reservation would lose this aid. Hardest hit would be Laramie County, which received $660,000 during the 1980-81 school year in federal payments under this program. The school district's total budget for next year is projected to be around $37 million, but Wyoming Education Association (WEA) President Bob Leinius has said, "This is one of our biggest concerns. If our school districts lose this money, where's the money going to come from to educate these kids?"

While Wyoming is fortunate to have at this time a healthy energy industry, which provided over $63 million dollars in mineral royalty monies to the state school system this past year, there is another problem. According to WEA President Leinius, in a news release on April 8th, 1981, many of the cuts projected to take place this fall leave no lead time for state lawmakers and local school district officials to replace those losses. The inability to plan for the future is frustrating for those in charge of education in the state, and wasteful of time and resources. The WEA Delegate Assembly approved a resolution on April 4th, 1981, calling for federal funding cutbacks to be preceded by at least a year's notice, to enable state legislators to review and fund affected programs. Whether this appeal will be heard and granted or not is yet to be seen.

Senate Majority Leader Howard H. Baker, Jr. (R-Tenn.), said in an interview with the NEA that "There is no more central and essential (an) element in the orderly and progessive development of our society than public education." This thought was further developed by NEA Executive Director Terry Herndon, who said, in a news conference, "Our nation's economic recovery cannot be plotted at the expense of our schools. Our children are, after all, America's human capital. Any 'investment' plan that dismisses their needs shortchanges our future."

The financial picture in other states may not be as bright as Wyoming's. Wyoming is fortunate to have alternative financial resources that it could draw upon to replace some of the lost federal revenue. However, will there be enough to go around? Will new programs for new needs be able to develop? Only time, and the response of Wyoming's citizens, business and corporations, will tell.

Besides the programs directed at schools and municipalities that may be affected by the proposed federal budget cuts, almost every sector of our society will feel the budget cutting ax to some degree. A few more of the programs which have been prominent in the Wyoming news are discussed below.

Rail Service–The Reagan Administration has proposed to cut Amtrak and Conrail service, which have been paid for through federal income tax monies. Amtrak, the passenger service, would no longer serve Wyoming, and would become a regional railroad serving the Boston-Washington corridor. This action would leave the United States the world's only major industrialized nation without a national passenger rail service. The proposed cuts are coming at a time when the number of passengers riding Amtrak nationally is up 20 percent. Conrail, an Eastern network of freight railroads, would be broken up. The high density lines would be sold at bargain prices to profitable railroads from the South and West. Thousands of miles of less used lines would be abandoned or sold to states and cities. In Wyoming, Ray Hartigan, the state's Brotherhood of Railway and Airline Clerks legislative director, estimates that as many as 100 Wyoming railroad workers could lose their jobs.

VA Hospitals–William B. Taylor, the National Service Officer for Disabled American Veterans, has said that proposed federal budget cuts would severely hurt veteran health care in Wyoming. Facing the greatest potential budget cuts in Wyoming are the veterans' hospitals in Cheyenne and Sheridan. Wyoming Veterans' Administration employees see the proposed cuts as inconsistent with Reagan's campaign position. During the 1980 election campaign, Reagan said that ". . . it is unconscionable that veterans in need are denied hospital and medical care because of inadequate funding which has closed hospital beds and cut health-care personnel within the VA."

Amtrak
Superliner
Coach
Baggage

This Amtrak passenger train may be one of the last in Wyoming, if federal budget cuts go as planned.

The Arts–Among the industrialized nations, the United States has the lowest level of government support for the arts. The U.S. government spends only 74¢ per man, woman and child on the arts and humanities each year. In contrast, France spends $11.83. President Reagan has asked to decrease the budget for the National Endowment for the Arts by 50 percent, from $170 to $85 million. The Wyoming Council on the Arts received about $273,000 in 1981 from the National Endowment for the Arts, and an additional $49,300 for its artist-in-residence program. If the proposed budget cuts are approved, the arts council block grant will amount to about $166,000 in 1982, and it is questionable whether any federal money will be available for the artist-in-residence program. David J. Fraher, the council's director of budget and planning, says that if the cutbacks become a reality, and the grant applications remain relatively stable, the council will only be able to grant 40 percent of its requests with federal funds in 1982. Funding for the 1981 fiscal year will remain at about the same level as in the past (approximately $300,000).

Rural Areas–A few of the programs which are specifically targeted for rural areas and scheduled for federal budget cutting include:

Farmers' Home Administration (FmHA) water and sewer loans would be cut from $750 to $300 million next year, with an additional cut of $160 million this fiscal year. Grants would drop from $200 to $100 million.

Ownership loans for farmers would be cut, and a loan program for new farmers with limited resources would end.

About $650 million of FmHA loans to build rental and low and moderate income housing in rural areas would be cut.

A $3.5 million program to build rural fire stations would end.

Loans for community facilities, such as health clinics, would drop from $260 to $130 million.

Rural planning grants would be cut by $5 million.

Miscellaneous

Wyoming Health Systems Agency is scheduled to lose all funding, and will be eliminated in 1982.

Wyoming's Small Business Administration could lose $7.6 million, 38 percent of its annual budget, making it tougher for some people to get loans.

Job Service of Wyoming, part of the Employment Security Division, is scheduled to lose 17 percent of its $3.7 million annual budget. Director Mudo Jurovich says the Job Service will expect layoffs, but will welcome a cut-back in "paper shuffling."

A venereal disease clinic in Casper will lose all of its funding for staff positions, and will have to close in July 1981.

Letters to the Editor

Last fall, *Wyoming Issues* asked our readers to send "Letters to the Editor." We have received a few letters, especially now that we've changed the format and style of the magazine. We have received praise, subscription renewals and cancellations, and the following letter.

Being an avid reader of *Wyoming Issues*, I am concerned with the apparent shift in content and emphasis throughout the Spring issue. It appears *Wyoming Issues* has now become a publication to showcase the ideas and policies of Wyoming's politicians and well-known citizens. As I understood the new changes, another goal is to make *Wyoming Issues* more readable by utilizing articles geared to human interest profiles and by incorporating information that can be found in all of Wyoming's printed and electronic media. The articles on Watt, Wallop, Simpson, the Little Snake River Valley, and the Legislative Review have been presented repeatedly by the State's media, thus why the redundancy?

It was my initial understanding that *Wyoming Issues* was a publication dedicated to indepth and sophisticated analyses of business, economic and socio-economic issues vital to Wyoming. At least the information in this publication was to go beyond that found in the average newspaper. I do hope your publication will return to such a philosophy even if readership should fail to increase dramatically.

Even with this criticism the *Wyoming Issues* is a fine publication in many areas especially sections on economic indicators, socio-economic issues and forecasts. If possible you might try including articles dealing with current research being undertaken by university professors, rather than books being published by professors that have little or no importance to Wyoming's current problems and trends.

Richard T. O'Gara
Consultant, Cheyenne

The editor replies:

Those of us at **Wyoming Issues** *believe we still provide in-depth, sophisticated analyses of issues vital to Wyoming. Since we've changed the format and style, we've presented new, in-depth material on Evanston, the census, James Watt, and, in this edition, coal slurry pipelines and federal budget cuts. We have changed the way material is presented. Instead of dry facts and numbers, or theories only the most sophisticated readers can understand, we're offering articles anyone can enjoy. Our research articles now focus on the results rather than the methods, because theoretical research is not to everyone's taste. Readers interested in the methods of those profiled can contact our "Spotlight" subjects for more detailed information.*

We added the book review because we feel we ought to have a little fun in our magazine. Not all books we review will be fiction witness this edition's review of Peter Iverson's history of the Navajos.

Kate Missett
Managing Editor

Wyoming Books

THE NAVAJO NATION

by Peter Iverson
History/Nonfiction.
Greenwood Press. $25.00

The Navajo Nation is a modern day history of the largest tribe of Native Americans. While most history books concentrate on periods that are long since past, Iverson focuses his attention on the period of 1960-1980. And, unlike many standard history books, this account of the Navajos does not deal with a closed chapter in the past, but deals instead with circumstances that are still vital to the Navajos.

Because the events which govern the life of the Navajos cannot be understood without some background, Iverson begins with a discussion of Navajo mythology. While this mythology is distinctly Indian in its presentation, it takes no great stretch of the imagination to translate the myths into Western European concepts. Following the mythology is a relatively fleeting look at what can be considered Navajo ancient history.

Iverson quickly gets to the two primary events with which the white man forever changed the life of the Navajos the Long Walk, and stock reduction.

The Long Walk took place in 1862, after an outbreak of fighting between Navajos and the U.S. Army. The Navajos (and Mescalero Apaches) were rounded up and imprisoned in the Bosque Redondo area of eastern New Mexico. The objective was for these Indians to "see the light," i.e., the European way of looking at the world. While trying to transform the Indians rather than eradicate them as a people, this period in U.S. history is nonetheless an ugly one. Kit Carson, a hero of the "American" West, was in charge of the round-up, and was not appreciated by the Navajos.

The Navajos were imprisoned for six years, but the Long Walk did not acculturate them to the white man's values. Instead, the Indians became cautious when dealing with whites.

Stock reduction came during the 20th century. In order to understand the significance of stock reduction, it is important to note that cattle, sheep, goats and horses compromised Navajo wealth during the 1920s and 1930s. Stock reduction was a Catch-22. In order for the Navajos to get more grazing land for their stock, they would have to give up some of the animals. Then, of course, they would not need as much grazing land.

Most Navajos were poor, even in terms of animals owned. They were not happy about giving up what little wealth they had. But the issue of stock reduction, long under consideration, was finally brought to life in 1933. The Navajo Tribal Council actually voted approval of stock reduction in 1934, but did so in exchange for enlarging the reservation. They lost, although not completely, on both counts. They lost animal herds and did not get the kind of boundary expansion they had bargained for. The Navajo caution, earned during the Long Walk, grew into distinct mistrust.

This passage, from the beginning of Chapter Three, accurately describes Navajo feelings about both the Long Walk and stock reduction:

> *Sam Ankeah, Navajo Tribal Council Chairman from 1946 to 1954, termed livestock reduction "the most devastating experience in Navajo history since the imprisonment at Fort Sumner from 1864 to 1868." Years later, Navajo Community College Press would issue a volume of Navajo remembrances of the era and entitle it: Navajo Livestock Reduction: A National Disgrace. To this day, in sum, it is a period remembered with bitterness and anger among the Navajos.*

U.W. History Professor Peter Iverson at work in his office. The Iverson family lived on the Navajo Reservation while Iverson was researching material for *The Navajo Nation*.

Photo by Linda Putnam.

These events, then, set the stage for modern Navajo history. Nearly every event of importance during the period 1960-1980, whether dealing with education, economics, medical care, or agriculture, revolved around the strong desire of the Navajos to be independent of the white man. The Navajos are succeeding, although it is a slow and often tortuous process.

Iverson explains this process of independence in depth. It is necessarily repetitious, because to understand one event, it is necessary to understand each event which makes up the struggle to be free of the white man's bureaucracy.

It would be difficult, after reading Iverson's book, to not understand modern Navajo problems. However, Iverson's style of writing is often annoying, with phrases either inappropriately broken up or awkwardly placed. Once the reader becomes used to Iverson's style, though, the book reads quickly and the reader is drawn into Navajo politics.

For those either who pride themselves on their "liberal" attitudes toward Indians, or who would like to know more about a distinct part of American culture, this book is a strong aid toward understanding the reality of Navajo life.

Kate Missett WI

Every picture tells a story, and Cody's artists are producing a lot of pictures.

Cody & Artists– A Mutual Admiration Society

James Bama at his easel.
Photo courtesy of the Powell *Tribune.*

by K.T. Roes

If Wyoming had an official artists' colony, it would be in Cody. The little (pop. 6,790) community in northwestern Wyoming is bordered by the spectacular Absaroka mountain range on the west, and is the last town before Yellowstone's East Gate and Shoshone National Forest, the first national forest in the United States.

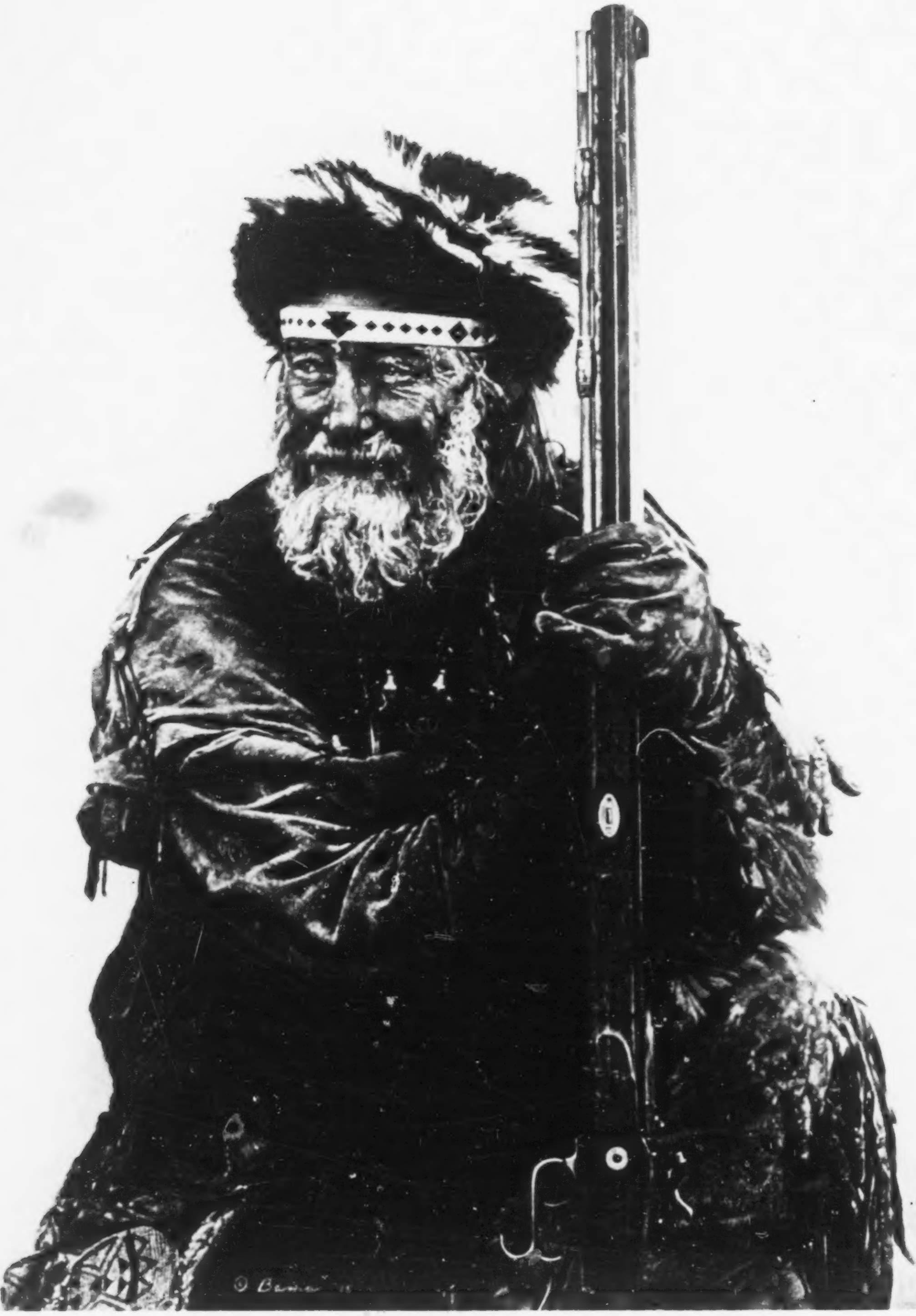
Cody has become the home of a number of talented artists, many of them nationally known. In the 1940s and '50s, Cody was a retirement spot for a pair of commercial artists who had made successes of portraiture and magazine illustration in the East and Midwest. Ed Grigware had worked as a commercial artist, but, in the 1940s, he moved to Cody, and began painting "free art," according to the curator of Cody's Buffalo Bill Museum, Dick Frost. Grigware painted a number of murals for the Church of Jesus Christ of Latter-Day Saints in church buildings as far away as Hawaii, and his Cody Mormon mural, which relates the early history of the Big Horn Basin, is among Cody's tourist attractions.

Adolph Spohr, who came to the U.S. from Germany as a youth, left a career as a portrait painter when he came to Cody in the 1950s. Spohr had specialized in painting portraits of important people after their deaths, according to Frost. Usually, there were no other portraits of these people available. Spohr paintings were in demand to hang in the lobbies of buildings erected by organizations carrying on the work of these people. Spohr's love of Indian arts and crafts brought him to Wyoming, and, when he saw Cody, "he fell in love with the place," Frost says. After Spohr retired to a home he built in Cody, he taught art classes for many years. Upon his death, his valuable Indian collection was a gift to the Buffalo Bill Historical Center.

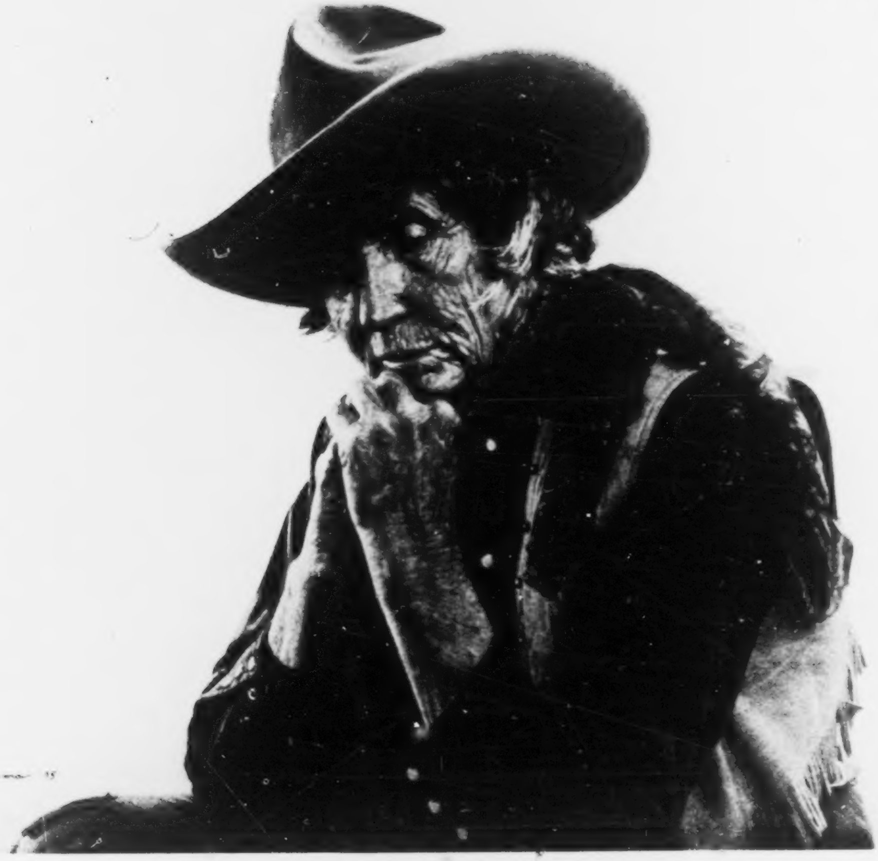
Another of Cody's first well-known artists is Nick Eggenhoffer, now enjoying a great commercial success. He came to Cody at the suggestion of the director emeritus of the Historical Center, Dr. Harold McCracken, and is still painting. Eggenhoffer is one of the country's most successful living Western artists. He is widely recognized for his accurate depiction of early horsedrawn transportation. In 1961, his definitive work on the subject, *Wagons, Mules, and Men*, was published. The book is now a collector's item. In June of this year, Eggenhoffer had an important show of his work open at the Historical Center, with 50 paintings. This show is a tribute to his six decades as a painter and illustrator of the Old West.

The beauty of northwest Wyoming also enticed native New Yorker James Bama. Each time he visited artist friend Bob Meyers on Meyers' South Fork ranch, Bama became more persuaded that the people of the area would be interesting subjects. He chose Cody as a place to launch his career as a fine artist, after 20 years as a commercial artist.

"The Indians excited my childhood imagination," Bama says. "I like the Western way of life . . . old people, valor, history." He and his wife Lynne made Cody their home in 1968, but Bama does not consider himself a "local" artist. His world is still tied to New York, but his immense popularity allows him



"Timber Jack Joe," a painting by James Bama, used as a Cody Stampede rodeo program cover. Photo courtesy of the Powell *Tribune*.



"*Lucile Moon Hall,*" *a James Bama painting, used as a Cody Stampede rodeo program cover.*
Photo courtesy of the Powell *Tribune.*

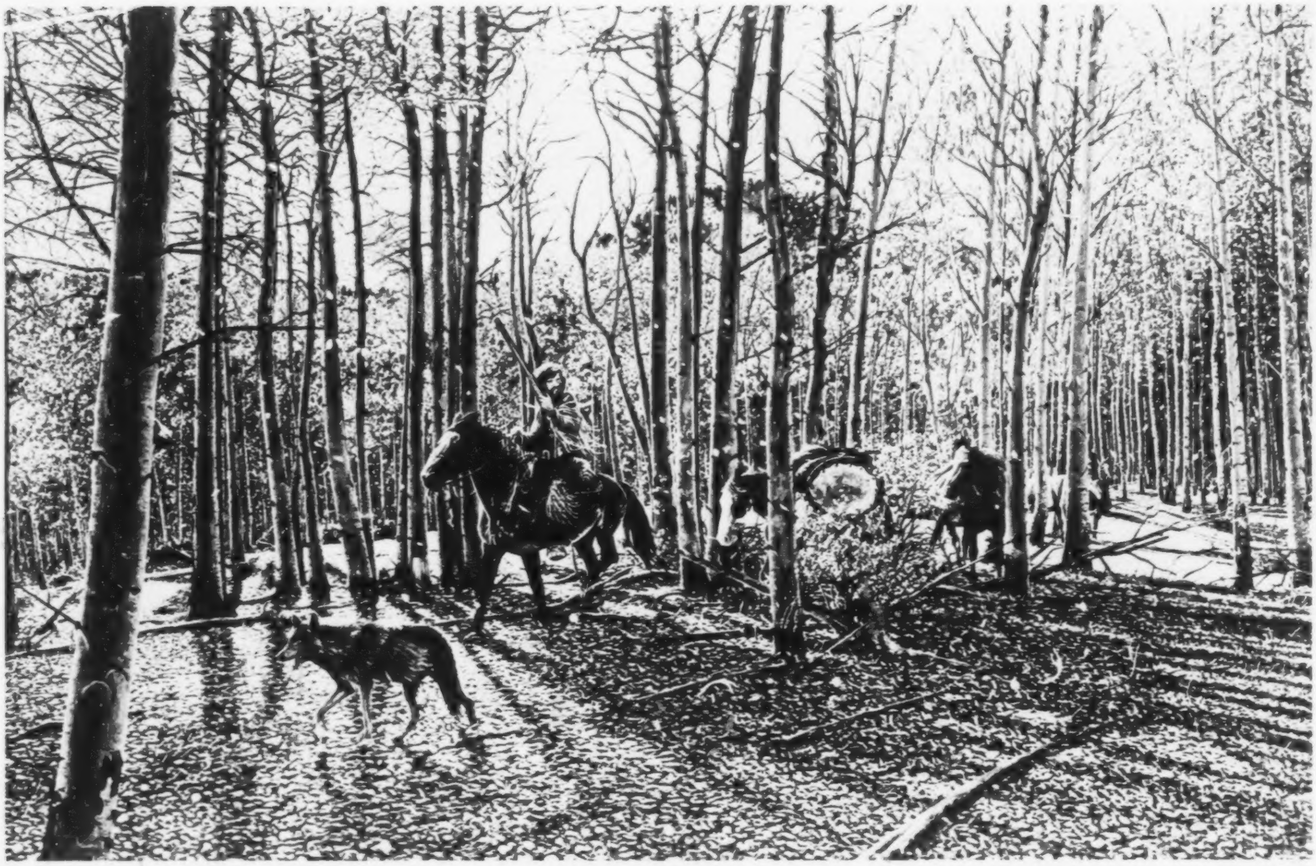
the luxury of living 2,000 miles away. He's sold virtually every piece of art he's made.

Bama's success has served as encouragement for over a dozen other Cody artists, and he's glad to help. "People can see what can be done, and maybe they won't be so timid. They'll take their work to larger cities, to the larger art world out there," he says. Despite a rigorous eight-hour day of painting, interrupted only by a few baskets in a patio basketball court, Bama still takes time to encourage, but not judge, local artists, some of whom are unabashed imitators of his realistic style.

One man who is nobody's imitator is Harry Jackson. His Wyoming Foundry Studios has its world headquarters in Cody, and his worldwide operations support a staff of 60. Jackson's first retrospective show opened recently at the Buffalo Bill Historical Center. It represents his career from its beginnings in abstract impressionism to the realistic sculptures that have made him a success. A book, *Harry Jackson* (by Larry Pointer and Don Goddard, Harry Abrams press, 1981), was published to coincide with the retrospective opening.

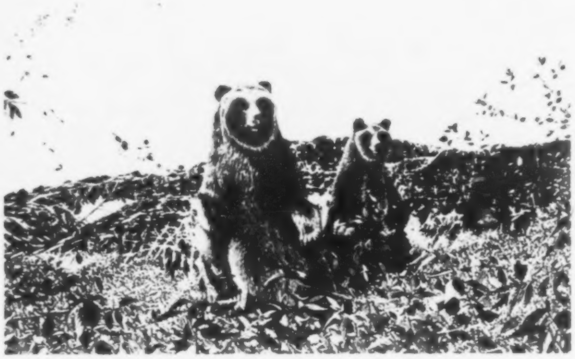
Jackson admires the West, and its cowboys for "their dignity and native good manners." Jackson ran away from Chicago as a young man, and first saw Cody in the late 1930s. He's been coming back ever since. Last summer, Jackson personally supervised the erection of an heroic bronze of Sacajawea in the Historical Center's courtyard, and presided over a dedication that attracted television, radio and print journalists from all over the world.

Harry Jackson at work.
Photo courtesy of the Powell *Tribune.*



Ted Feeley's "Crystal Wind." K.T. Roes photo.

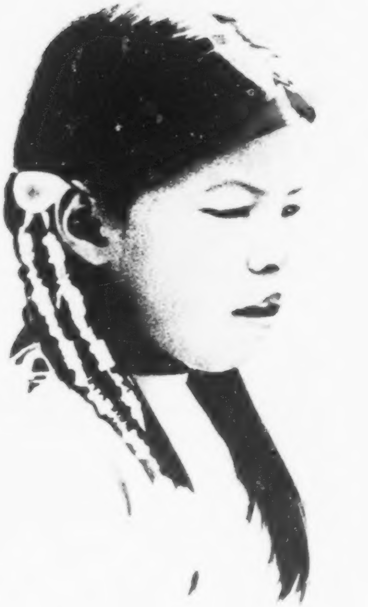
Ted Feeley with one of his realistic paintings.
Photo courtesy of the Powell *Tribune.*



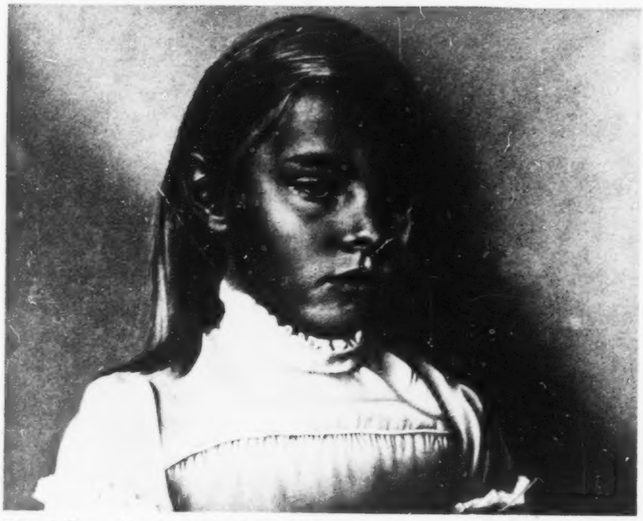
"Mother Griz," by Ted Feeley.
Photo courtesy of the Powell *Tribune.*

Cody has always been home for another artist, Ted Feeley, and he regards his interest in painting Western subjects as natural. As he puts it, "I was born and raised in Cody – what else am I going to do?" But it almost wasn't that way. When Feeley was an art student at the University of Wyoming, he was often dissuaded by instructors from pursuing Western themes, until he convinced instructor Robert Russin that his interest was legitimate. Feeley says Russin, one of Wyoming's prominent artists, supported and influenced his work.

Feeley spent some time in California after his two years at UW, but he got homesick for the Wyoming mountains. He began painting on his return to Cody. This year, Feeley was selected to exhibit five pieces of his work at the George Phippen Show in Prescott, Arizona. In 1980, Feeley won two first places at that show. Feeley issues prints of his paintings each year, as does Bama.



"Study #1 from Crow Fair," a watercolor by Steve Halvorsen. K.T. Roes photo.



"Sarah," an oil painting by Steve Halvorsen. K.T. Roes photo.

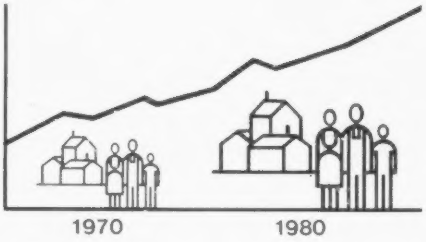
Cody is also the home of Steve Halvorsen, a painter and printmaker. Halvorsen grew up in Powell, but spent a lot of time at his parents' cabin at North Fork, west of Cody, where he now has his business, Atelier de Gravure (literally, "workshop of etching"). Using a process called intaglio, Halvorsen produces etchings with a heavy metal press, aptly called a "Rembrandt Elephant." The press exerts tons of pressure on the handmade rag paper Halvorsen uses. He also uses zinc and copper plates to make his own etchings, as well as those of Bama, who lives nearby. Halvorsen teaches several art classes at Northwest Community College in Powell, but what he'd like is the time to devote all of his energy to painting and printmaking.

Halvorsen rarely paints Western subjects, an anomaly among Cody artists. When he chooses a Western subject, it's because he's interested in its aesthetics, not its history or romance. Halvorsen has chosen to live near Cody because of its ambience, which he says weighs favorably as a location for an artist, as opposed to large metropolitan areas where there are hundreds of stimuli for the imagination and many other artists whose work can be an influence.

No matter what the theme of the paintings, prints, or sculpture, all these artists have selected Cody as home because the town is small, quiet, and friendly, with a breathtaking panorama to the west. Here, their imaginations can run free.

Steve Halvorsen lifts a Bama etching from the plate. Photo courtesy of the Powell *Tribune*.

Housing and Population Figures for Wyoming



by Judy Denison and G. Fred Doll

Housing and population figures, constantly being updated, are provided through the Census Retrieval Information Service. A variety of figures are presented in this article.

Wyoming's total population increased by 41.6 percent from 1970 to 1980, making it the fourth fastest growing state in the U.S. Its rate is surpassed only by Nevada (63.5 percent), Arizona (53.1 percent), and Florida (43.4 percent). The other states in the top ten are Utah (37.9 percent), Idaho (32.4 percent), Alaska (32.4 percent), Colorado (30.7 percent), New Mexico (27.8 percent)

	Housing Units
Wyoming	188,642
Albany County	11,954
Laramie city	9,536
Rock River town	178
Big Horn County	4,835
Greybull town	977
Byron town	216
Cowley town	157
Deaver town	68
Frannie town (pt.)	58
Lovell town	969
Basin town	566
Manderson town	62
Campbell County	9,505
Gillette city	4,857
Carbon County	8,659
Elk Mountain town	128
Hanna town	844
Medicine Bow town	377
Baggs town	182
Dixon town	46
Rawlins City	4,223
Sinclair town	226
Encampment town	326
Riverside town	53
Saratoga town	977
Converse County	5,350
Douglas town	2,338
Lost Springs town	3
Glenrock town	1,044
Crook County	2,434
Hulett town	151
Moorcroft town	442
Sundance town	479
Fremont County	14,995
Dubois town	464
Hudson town	211
Lander city	3,323
Shoshoni town	379
Pavillion town	103
Riverton city	3,661
Goshen County	5,017
LaGrange town	101
Yoden town	52
Fort Laramie town	152
Lingle town	214
Torrington town	2,231
Hot Springs County	2,537
East Thermopolis town	217
Kirby town	50
Thermopolis town	1,715
Johnson County	3,029
Buffalo city	1,673
Kaycee town	130
Laramie County	27,390
Cheyenne city	19,608
Albin town	72
Burns town	110
Pine Bluffs town	479
Lincoln County	4,671
Afton town	528
Thayne town	103
Diamondville town	360
Kemmerer town	1,302
LaBarge town	121
Cokeville town	185
Natrona County	28,493
Casper city	20,259
Mills town	895
Edgerton town	205
Midwest town	253
Evansville town	890
Niobrara County	1,434
Lusk town	777
Van Tassell town	12
Manville town	53
Park County	8,774
Cody city	2,857
Meeteetse town	238
Frannie town (pt.)	12
Powell city	2,001
Platte County	5,053
Chugwater town	139
Glendo town	172
Guernsey town	640
Hartville town	65
Wheatland town	2,516
Sheridan County	10,928
Clearmont town	72
Sheridan city	6,604
Dayton town	270
Ranchester town	240
Sublette County	2,393
Big Piney town	223
Marbleton town	186
Pinedale town	524
Sweetwater County	15,116
Granger town	71
Green River city	4,237
Rock Springs city	7,515
South Superior town	245
Wamsutter town	281
Teton County	4,894
Jackson town	2,074
Uinta County	4,497
Lyman town	728
Mountain View town	219
Evanston city	2,315
Washakie County	3,784
Ten Sleep town	193
Worland city	2,495
Weston County	2,900
Newcastle city	1,443
Upton town	525

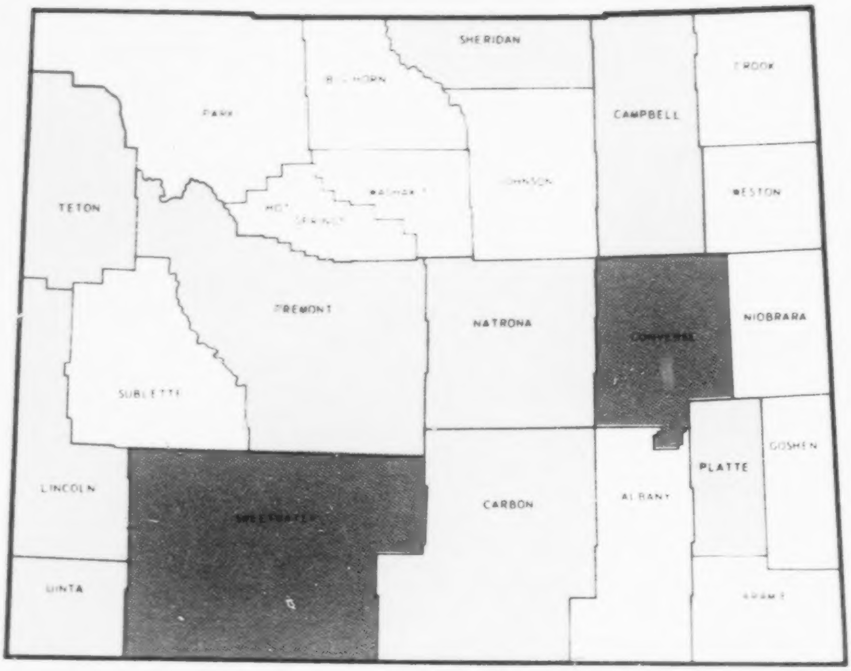
and Texas (27.1 percent). The rate for the United States as a whole was 11.4 percent. The population increase for Wyoming counties is shown on Map 1.

Wyoming had the fifth largest rate of increase in housing units, at 62.2 percent. The top four states were Nevada (96.8 percent), Arizona (89.5 percent), Alaska (78.8 percent) and Florida (73.1 percent). Other states in the top ten for rate of housing increase were Colorado (57.5 percent), New Mexico (55.3 percent), Utah (55.2 percent), Hawaii (54.4 percent), and Idaho (53.3 percent). The rate for the country was 28.7 percent. Map 2 shows the housing unit rate of increase in Wyoming counties.

Five counties share over half of Wyoming's population. These are Natrona (15.3 percent), Laramie (14.6 percent), Sweetwater (8.9 percent), Fremont (8.6 percent), and Albany (6.2 percent). In 1970, the leading counties were Laramie (17.0 percent), Natrona (15.4 percent), Fremont (8.5 percent), Albany (8.3 percent), and Sheridan (5.4 percent). See Map 3 for a percentage breakdown of population in Wyoming counties.

The biggest changes in share of Wyoming's population occurred in four counties: Sweetwater (from 5.5 to 8.9 percent), Campbell (3.9 to 5.2 percent), Converse (1.8 to 3.0 percent), and Laramie (17.0 to 14.6 percent). Altogether, eight counties gained population relative to the state total (Sweetwater, Campbell, Converse, Carbon, Uinta, Platte, Teton and Fremont), while the other 15 lost population.

Converse and Sweetwater counties showed the highest rates of population increase, at 136.9 and 126.9 percent respectively. In the counties of Converse, Natrona, Sweetwater and Uinta, the actual increase in population was larger within city limits, while the rate of increase was greater outside the city limits. In both population and rates, the greater increases were outside city limits in Campbell, Fremont, and Teton counties, while Carbon, Lincoln, Platte and Sheridan counties increased more within their city limits.



Map 1. Rate of Population Increase

☐ 0-30%
☐ 30-100%
▨ Over 100%

The cities showing the highest rates of population increase were Hanna (397.4 percent), Wamsutter (389.9 percent), Lyman (255.2 percent), Evansville (218.8 percent), Ranchester (214.9 percent) and Green River (205.2 percent).

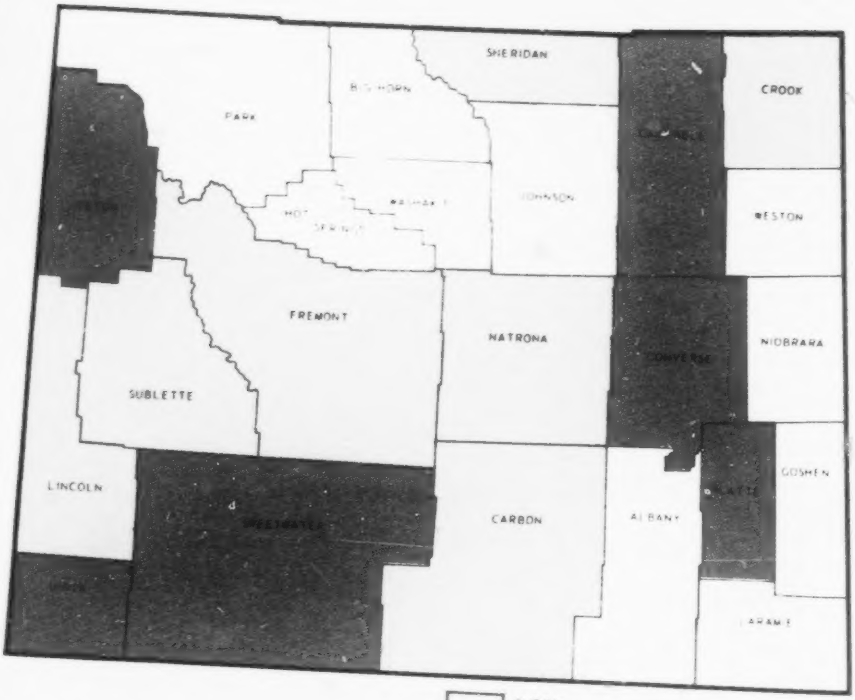
While Converse and Sweetwater counties ranked first and second in rate of population increase, they ranked only third and fourth in rate of increase in housing units, behind Teton and Campbell counties.

The minority population in Wyoming is only 7.8 percent, while, in the United States as a whole, it is 20.3 percent. Minority population is calculated here as the sum of three racial categories (Black; American Indian, Eskimo and Aleut; and Asian and Pacific Islander) and the ethnic Spanish Origin category. Wyoming has 5.2 percent Spanish, 1.5 percent Indian, 0.7 percent Black, and 0.4 percent Asian.

Fremont County shows the largest percentage of minorities, at 14.4 percent, due to an 11.0 percent Indian population, by far the largest in the state. Next is Laramie County, at 13.9 percent, with 9.6 percent Spanish and the state's highest percentage of Blacks, 2.9 percent. Carbon County, next at 12.9 percent, has the state's highest percentage of Spanish, 11.3 percent. Spanish is the largest minority for all the other counties, except for Hot Springs and Crook, which have larger Indian populations. Crook County has the lowest minority rate, at 0.9 percent.

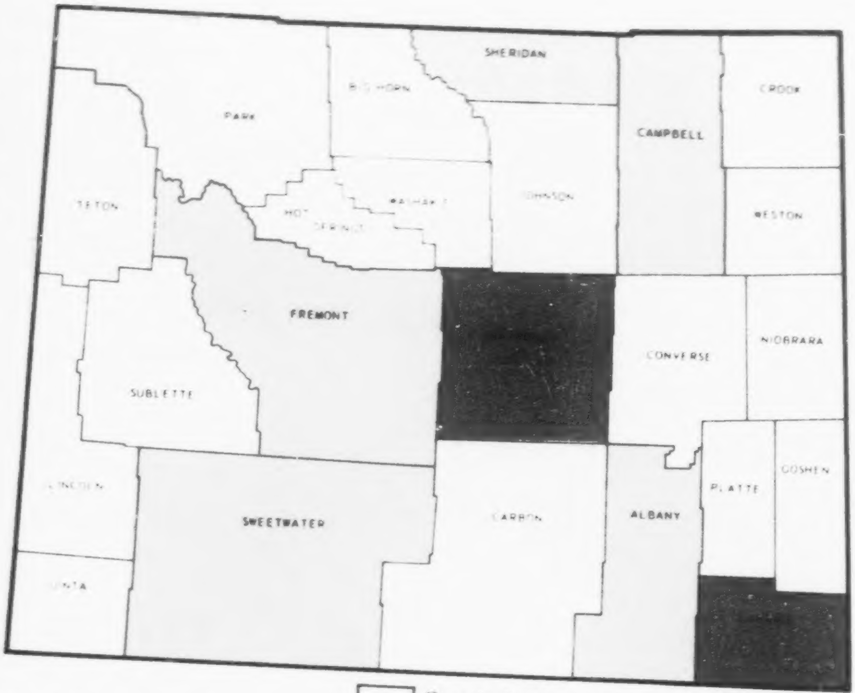
Total housing unit figures in Wyoming are now available from the Census Retrieval Information Service (CRIS) for counties, census county divisions, and places (cities and towns).

Total population figures, as well as a breakdown of five racial categories and a Spanish ethnic total, are available from CRIS for counties, census county divisions, places, tracts or block numbering areas, enumeration districts or block groups, and also for blocks in 40 cities and towns. These block figures are available for: Buffalo, Casper, Cheyenne, Chugwater, Cody, Cokeville, Dayton, Diamondville, Douglas, Elk Mountain, Evanston, Evansville, Fort Laramie, Gillette, Glenrock, Granger, Green River, Hanna, Jackson, Kaycee, Kemmerer, LaBarge, Lander, Laramie, Lyman,


SHERIDAN
BIG HORN
CROOK
PARK
CAMPBELL
TETON
HOT SPRINGS
WASHAKIE
JOHNSON
WESTON
FREMONT
NATRONA
CONVERSE
NIOBRARA
SUBLETTE
LINCOLN
SWEETWATER
CARBON
ALBANY
PLATTE
GOSHEN
UINTA
LARAMIE

Map 2. Rate of Housing Increase

☐ 0-50%
▨ 50-100%
■ Over 100%


SHERIDAN
BIG HORN
CROOK
PARK
CAMPBELL
TETON
HOT SPRINGS
WASHAKIE
JOHNSON
WESTON
FREMONT
CONVERSE
NIOBRARA
SUBLETTE
LINCOLN
PLATTE
GOSHEN
SWEETWATER
CARBON
ALBANY
UINTA

Map 3. Percentage of Total Population

☐ Counties having less than 5% of State's population
▨ Counties having 5-10% of State's population
■ Counties having over 10% of State's population

Medicine Bow, Meeteetse, Mills, Moorcroft, Mountain View, Newcastle, Rawlins, Riverton, Rock Springs, Saratoga, Sheridan, South Superior, Torrington, Wamsutter, and Wheatland.

More detailed information on population and housing will be available through CRIS on Summary Tape File 1 (STF1), which will be released by the Bureau of the Census in the fall.

CRIS is a cooperative service provided by the Institute for Policy Research, University of Wyoming; the Research and Statistics Division of the Wyoming Department of Administration and Fiscal Control; and the State Planning Division of the Wyoming Department of Economic Planning and Development. For more information about CRIS, contact: Box 3925 University of Wyoming, Laramie, WY 82071, phone (307)766-5141; or Room 302 Emerson Building, Cheyenne, WY 82002, phone (307)777-7540.

Population by Age – 1980

All ages	Under 5	5 to 9	10 to 14
470,816	44,883	39,328	37,220
15 to 19	**20 to 24**	**25 to 29**	**30 to 34**
42,786	50,748	49,515	39,415
35 to 39	**40 to 44**	**45 to 49**	**50 to 54**
29,424	23,783	20,795	21,151
55 to 59	**60 to 64**	**65 & over**	**Median age**
18,935	15,615	37,218	27.1

SPOTLIGHT

"Laramie's Meteorologist," Augie Auer, points out similarities in weather patterns on this map. Auer has been called upon frequently this year to explain Wyoming's stranger-than-normal weather.
Photo by Linda Putnam.

by Kate Missett

If the weather is at all unusual, as it has been in Wyoming this year, people in Laramie turn to August H. Auer, Jr., for an explanation. Auer, known as "Augie," is the man to ask about any weather problems.

Auer is the acting head of the Department of Atmospheric Science at the University of Wyoming, and, as such, he has had to forego much of his research this year. However, he is still researching a few important aspects of Wyoming's weather.

One of the more interesting research projects Auer has been working on is a time-lapse film, made from pictures of weather maps. These pictures, taken every 12 hours, indicated a pattern in this past winter's weather, which was almost identical to the dry year of 1977. Because of the pattern, Auer and other atmospheric scientists predicted a drier and warmer winter than usual, and that's precisely what we had.

Although Auer was right on the mark, he stresses, "I'm trying to be very, very objective about this. I didn't get a particularly big kick out of telling everybody that this was going to be a very dry year.

"Don't forget, we didn't predict a record drought. We just said it would be hotter and drier than normal. I think that along with doing this kind of work comes the responsibility of being careful about what you say and how people interpret it."

One rule of thumb Auer gives is, "As October goes, so goes the weather through January." This is just Auer's way of saying that there are two times during the year when general weather predictions can be made. These are at the vernal (spring) and autumnal equinoxes, which occur about March 21 and September 23, respectively.

The pattern made it clear in October, to Auer and his associates, that there would be a drought situation last winter. Auer says, however, "Nobody listens to warnings of a drought in October, because most of the snowfall comes in February and March." Auer indicates that waiting for February snowfalls is similar to waiting for an inheritance from a rich uncle. In dry years, we're likely to find out that our uncle wasn't as rich as we had supposed.

Auer points out that this past winter was much like the winter of 1976-77. "I could show you the upper air currents on a map," Auer says. "Those for October 1976 and November 1980 are identical. If you were a fingerprint expert, and were looking at those maps, you would say that they belong to the same thumb. Right down to about March, the two years are identical."

Auer speculates that there may be a cyclical nature to dry spells or droughts, with these periods coming in 22 year cycles. He cites the fact that there were droughts in the mid-1930s, the late 1950s, and the latter part of the 1970s and early 1980s. However, there is no real correlation which can be made. While some theories have been put forward tying droughts to the 11-year sunspot cycle, Auer says that sunspots cannot simultaneously account for drought and flood. To support his ideas, Auer cites the facts of India's winter floods, and Japan having an extraordinary winter, with as much as 180 inches of snow by January, while the Western U.S. had little or no moisture.

Wyoming Issues raised the possibility that Mt. St. Helens' eruption was responsible for the dry winter. But Auer says, "Most scientists are of the opinion that Mt. St. Helens had no effect on our weather this year, and it is not responsible for the drought which hit the northern plains last summer." Auer emphasizes, though, that volcanic eruptions can have an effect on the weather. Auer says that the ash from Mt. St. Helens was not the kind that blocks out sunlight. While there was some ash fallout from Mt. St. Helens, the ash is now concentrated over the North Pole, and Auer says that, even if it were circling the globe, it would have no warming effect on the atmosphere.

Auer contends that people tend to blame unusual weather on unusual events. "I remember some of the droughts of the late '50s. There was talk of them being related to nuclear explosions, but those kinds of cause and effect relationships are pretty tenuous. A large low pressure system on any given winter day has much more energy than a few atomic bombs."

Auer says that the dry weather last winter was due to three things. The first of these is the lack of a storm track. The storm tracks are established by the transfer of heat from the equator to the North Pole during winter in the northern hemisphere. Last winter, the pattern established warm air over most of the Rocky Mountains, forcing storms to go up in to Canada. At the same time, cold air over the Eastern U.S. accounted for record-breaking low tempeatures.

The second cause of dry weather is the source of humidity. The majority of the moisture we get in Wyoming comes from the Gulf of Mexico, with a secondary source off the California coast. The distance this moisture has to travel accounts for Wyoming's generally dry climate, and, with the lack of a storm track, we didn't get any moisture to speak of last winter.

The third factor is persistence in the lack of storm tracks and humidity sources. While this pattern held for the winter, it broke down some in March and April, bringing rain and some snow to parts of Wyoming, and an abundance of moisture in May. A new pattern, now also considered persistent, was established. Most parts of Wyoming continued to have very warm, dry weather throughout April, but, in May, the rains and snow started in earnest. Now, instead of worrying about drought, some Wyomingites may have to worry about floods, due to saturation of the soil.

Auer says, "People will remember this summer as soggy, and a little on the cool side." Athough Auer originally predicted that it would be "remote" for Laramie to receive the 2.5 inches of precipitation that were needed to bring conditions up to normal, Laramie had received 3.5 inches by May 20th. Auer says that the drought which he originally predicted is now alleviated.

Wyoming Issues asked Auer for a summer forecast (on May 20, 1981). Auer predicted the following: The predictions for the remainder of May, June and July will be cooler, wetter and windier than normal, with cool, moist air with us until the end of July. Precipitation levels will be as much as 25 percent above normal through July, with temperatures 4 percent cooler for that period. The incidence of precipitation occurrences will increase – there will be a lot of small storms, instead of a few big ones. However, not all the excess moisture will be absorbed into the soil, because there will be an accompanying increase in winds, which will cause some evaporation.

Auer added a warning to his forecast, however, saying that there is a slogan in the weather forecasting business: "He who looks into the crystal ball too much ends up eating ground glass."

ECONOMIC INDICATORS

Wyoming's Economy Begins 1981

by Bruce Dougan

After a general upswing in the economy in the fourth quarter of 1980, the first quarter of 1981 resulted in mixed blessings on the economic front. The employment outlook definitely slowed, in what appeared to be a cooling off period in employment statistics. While the total civilian labor force was a seasonally adjusted total of 239,044 (.7 percent higher than last quarter), it represents a .4 percent decrease from a year ago. Total employment rose slightly when compared to fourth quarter figures, but fell 1.8 percent when examined next to figures from last year. Total agricultural employment fell since the fourth quarter, and total nonagricultural employment dropped to a seasonally adjusted 210,937 workers. The Wyoming unemployment rate rose to an adjusted 4.5 percent in the first quarter. It should be noted that this figure is about 74 percent of the U.S. average.

Mixed conditions continue in the wage and employment opportunity sector. Average hourly earnings fell for the first time since mid-1979, to $9.72, 1.5 percent less than in the fourth quarter of 1980. Average weekly hours rose to a two year high of 42.4, 6.3 percent greater than last quarter. Wyoming workers appeared to be working longer hours in the first quarter of 1981, but received slightly less on the average in hourly wages. Initial unemployment claims rose 7.5 percent over last quarter. Nonagricultural job placements also rose during this period. A total of 7,864 workers were placed in jobs, .4 percent greater than last year and 15.8 percent greater than the last quarter. Help wanted advertisements rose on a quarterly basis, but showed a decrease of 12 percent from a year ago.

Consumer statistics showed some disheartening news in certain areas. Wyoming's total personal income fell in the fourth quarter of 1980. This drop in total personal income was the first such drop ever recorded in the *Wyoming Issues* data series. The drop was small, however, and the annual change was an overall rise of 20.6 percent. The U.S. consumer price index rose to 263.1, 6.8 points greater than last quarter, and 11.2 percent greater than last year. The cost of living index for Wyoming rose 10.18 percent over one year ago. Housing costs rose at the greatest rate, followed by food costs, apparel costs, recreation and personal care costs, cost of medical care, and transportation costs. New car and truck registrations rose for the third quarter in a row, but are still 9.5 percent less than one year ago. State and sales use tax collections rose an estimated 5.9 percent over last quarter. Gasoline price reporting methods have changed somewhat since the last issue of *Wyoming Issues.* A complete description of this change

with Mixed Indicator Patterns

appears in the consumers section.

Business conditions in Wyoming in the first quarter of 1981 show that the total number of new corporations rose to 787, a gain for the second quarter in a row. The number of new domestic and foreign corporations increased over last quarter. New foreign corporations totaled 295, 63.9 percent greater than last year. The first quarter showed a 6.1 percent rise in bankruptcies over those in the fourth quarter. The number of business failures rose to a new high of 35, 94.4 percent higher than at this same time last year. While the number of bankruptcies was high, the value of the business failures decreased from the last quarter.

High interest rates do not seem to deter the amount of loans made by state and local banks in Wyoming. Total loans increased 3.7 percent over last quarter. Total deposits at state and national banks dropped 2.2 percent from last quarter and demand deposits dropped 6.2 percent. The loan-deposit ratio for state and national banks rose to 61, up 7.0 percent from last quarter. Savings and loan mortgage loans increased 10.1 percent over last quarter and total savings increased to a value 16.7 percent higher than last year at this time.

Coal production in Wyoming continued its upward trend in the first quarter of 1981. Total coal production in the first quarter rose by 3.3 percent over last quarter, a 33.8 percent increase over last year. First quarter coal production amounted to 11.6 percent of the total U.S. coal production. Wyoming oil production continues to show small growth. First quarter production figures were 3.8 percent above production figures of one year ago. Oil production in Wyoming continues to stand at about 4 percent of the total U.S. production. Natural gas industry figures show a dramatic 30.3 percent increase over the previous quarter. This rise in production follows a two quarter decline and represents a 49 percent increase over figures from one year ago.

Ranchers in Wyoming appeared to lose some ground in the first quarter of 1981. The index of prices received for livestock fell 19 points (7.0 percent) from last quarter. This represented a 29 point (10.3 percent) decrease from a year ago. Farmers appear to have picked up some momentum, however, since Wyoming's prices received for crops is 13.4 percent greater than the national average, rising 37 points (13.5 percent) over last quarter's figures. Timber cut in Wyoming national forests increased to a total of 18,109 MBF, 9.5 percent greater than last year at this time.

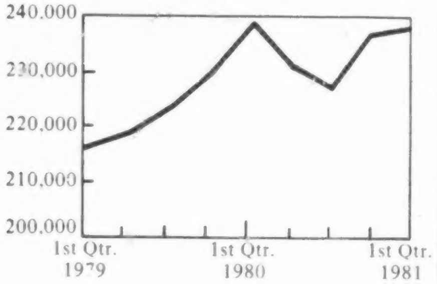
The number of visitors to Grand Teton and Yellowstone National Parks showed a seasonal drop for the first quarter. Visitors to the three national monuments also showed a decrease over last quarter, but showed a 90.9 percent increase over last year's total. Total traffic volume rose over last quarter but is still less than figures from a year ago.

The construction sector of the Wyoming economy continues to show significant regional variation. Cities that are polled by *Wyoming Issues* showed an increase in the number of building permits issued. Areas of the state polled by other sources seem to show a decrease in statewide totals of building permits issued. In any case, total residential building value fell in both the quarterly and annual comparisons. Total nonresidential building value fell slightly from last quarter. The number of new dwelling units started in the first quarter dropped 24.2 percent from last quarter. A large portion of this decline might be attributed to rising interest rates which curb the growth of new building starts.

The Wyoming utility industries statistics showed some interesting comparisons in the first quarter of 1981. Electrical consumption as a seasonally adjusted figure is 1.3 percent less than the previous quarter, but rose 2.1 percent over the same period one year ago. Natural gas usage showed a surprising 37.4 percent increase over last quarter. The number of telephones in service fell slightly when examined next to last quarter figures.

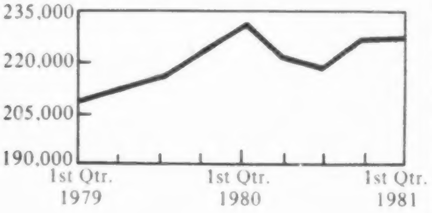
Employment

Total Civilian Labor Force



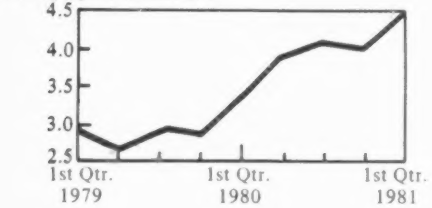
	Actual
Jan.	222,068
Feb.	220,967
Mar.	224,614
1st Quarter '81 Average Actual	222,550
Average Seasonally Adjusted	239,044
Percent change, seasonally adjusted basis from	
1st Quarter '80	-.4%
4th Quarter '80	.7%
1st Qtr. actual as percent of U.S. actual	.208%

Total Employment[1]



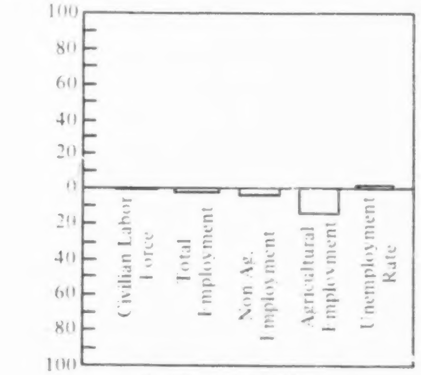
	Actual
Jan.	210,478
Feb.	208,915
Mar.	212,392
1st Quarter '81 Average Actual	210,595
Average Seasonally Adjusted	227,670
Percent change, seasonally adjusted basis from	
1st Quarter '80	-1.8%
4th Quarter '80	.0%
1st Qtr. actual as percent of U.S. actual	.218%

Unemployment Rate (%)



	Actual
Jan.	5.2
Feb.	5.5
Mar.	5.4
1st Quarter '81 Average Actual	5.4
Average Seasonally Adjusted	4.5
Point change, seasonally adjusted basis from	
1st Quarter '80	1.1
4th Quarter '80	.5
1st Qtr. actual as percent of U.S. actual	74.0%

Employment



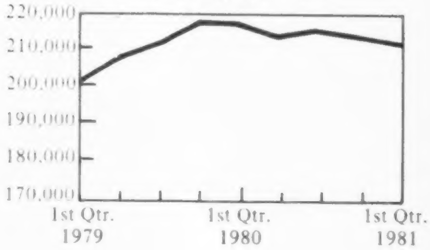
Employment Indicators
Annual Percentage Change

The employment situation in Wyoming worsened in the first quarter of 1981, after improvement last quarter. The total civilian labor force rose slightly from last quarter, to a seasonally adjusted total of 239,044. This is .7 percent more than last quarter, and .4 percent less than one year ago. Wyoming's percent of the U.S. total fell slightly, to .208 percent.

Total employment rose, by only 109 people, when seasonally adjusted, to a total of 227,670. This is a decrease of 1.8 percent from last year. Total nonagricultural employment fell also, to a seasonally adjusted 210,937, 1.2 percent less than last quarter and 3.5 percent less than one year ago. Total agricultural employment fell from the fourth quarter, to 13,118, when seasonally adjusted. This is a decline of 6.4 percent from last quarter and 13.2 percent from last year. The Wyoming total is .278 percent of the U.S. total.

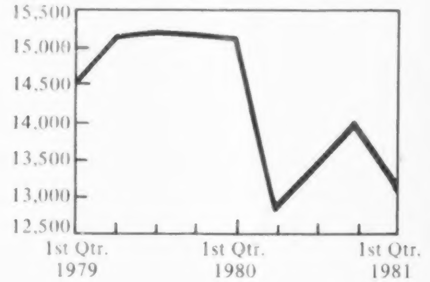
The unemployment rate rose again after having been fairly stable the last three quarters. The first quarter seasonally adjusted unemployment rate is 4.5 percent, 74.0 percent of the U.S. average.

Total Nonagricultural Employment[1]



	Actual
Jan.	204,800
Feb.	200,000
Mar.	200,800
1st Quarter '81 Average Actual	201,867
Average Seasonally Adjusted	210,937
Percent change, seasonally adjusted basis from	
1st Quarter '80	-3.5%
4th Quarter '80	-1.2%
1st Qtr. actual as percent of U.S. actual	.213%

Total Agricultural Employment[1]



	Actual
Jan.	7,941
Feb.	9,521
Mar.	10,196
1st Quarter '81 Average Actual	9,222
Average Seasonally Adjusted	13,118
Percent change, seasonally adjusted basis from	
1st Quarter '80	13.2%
4th Quarter '80	-6.4%
1st Qtr. actual as percent of U.S. actual	.278%

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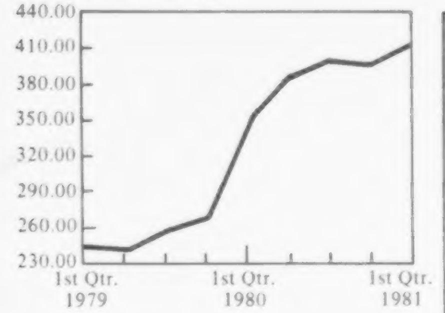
[1] Total Agricultural and Total Nonagricultural Employment may not equal Total Employment due to data gathering differences.

All data are preliminary. Revisions appear in past quarterly trend data.

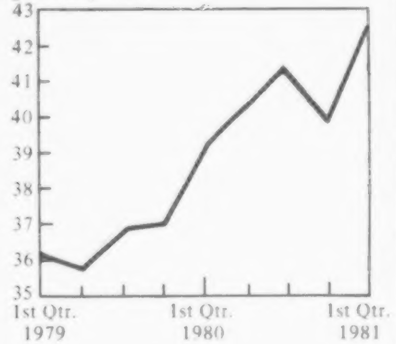
Wages and Employment Opportunities

Average Weekly Farnings ($)



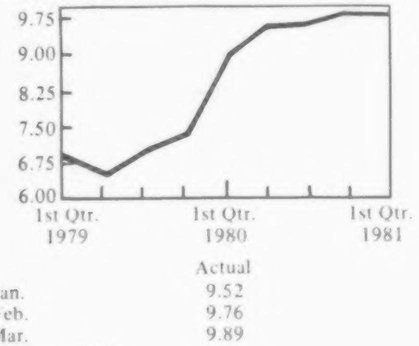
	Actual
Jan.	412.22
Feb.	406.02
Mar.	417.36
1st Quarter '81 Average Actual	411.87
Percent change, actual basis from	
1st Quarter '80	16.7%
4th Quarter '80	4.4%

Average Weekly Hours



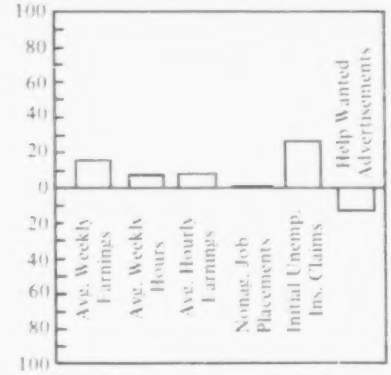
	Actual
Jan.	43.3
Feb.	41.6
Mar.	42.2
1st Quarter '81 Average Actual	42.4
Percent change, actual basis from	
1st Quarter '80	8.2%
4th Quarter '80	6.3%

Average Hourly Earnings ($)



	Actual
Jan.	9.52
Feb.	9.76
Mar.	9.89
1st Quarter '81 Average Actual	9.72
Percent change, actual basis from	
1st Quarter '80	8.4%
4th Quarter '80	–1.5%

Wages and Employment Opportunity



Wages and Employment Opportunity Indicators
Annual Percentage Change

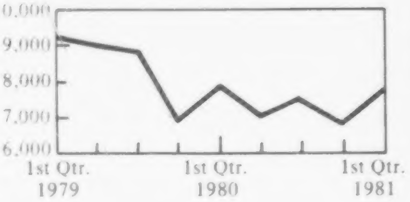
Average weekly earnings for first quarter 1981 rose to $411.87, 4.4 percent more than last quarter, and 16.7 more than last year. Average hourly earnings dropped for the first time since the second quarter of 1979, to $9.72. This is 1.5 percent less than the $9.82 registered in the fourth quarter of 1980, and 8.4 percent more than last year at this time. Average weekly hours for the first quarter were 42.4, 6.3 percent more than last quarter. This is a new two year high, surpassing the 41.6 hours reported in the third quarter of 1980.

Initial unemployment insurance claims rose 7.5 percent over last quarter, when seasonally adjusted. The actual number of 8,231 is seasonally adjusted to 5,850. This is 27.3 percent more than just one year ago, and 77.4 percent more than two years ago.

Nonagricultural job placements rose in the first quarter, following the zig-zag pattern begun in the third quarter of 1979. A total of 7,864 people were placed in jobs, 15.8 percent more than last quarter. This is .4 percent more than the 7,832 people placed in the first quarter of 1980. The number of help wanted advertisements rose for the second quarter in a row to a seasonally adjusted average 497 per month. This is 15.0 percent higher than last quarter but 12.2 percent less than one year ago.

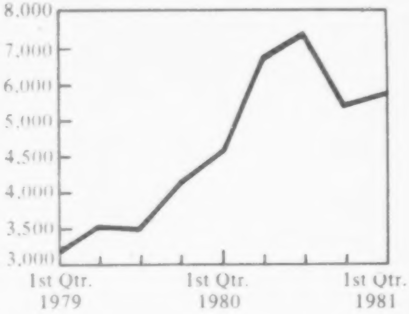
All data are preliminary.
Revisions appear in past quarterly trend data.

Nonagricultural Job Placements



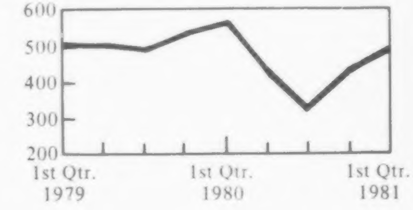
	Actual
Jan.	1,514
Feb.	1,663
Mar.	3,059
1st Quarter '81 Total Actual	6,236
Total Seasonally Adjusted	7,864
Percent change, seasonally adjusted basis from	
1st Quarter '80	.4%
4th Quarter '80	15.8%

Initial Unemployment Insurance Claims



	Actual
Jan.	3,218
Feb.	2,540
Mar.	2,473
1st Quarter '81 Total Actual	8,231
Total Seasonally Adjusted	5,850
Percent change, seasonally adjusted basis from	
1st Quarter '80	27.3%
4th Quarter '80	7.5%

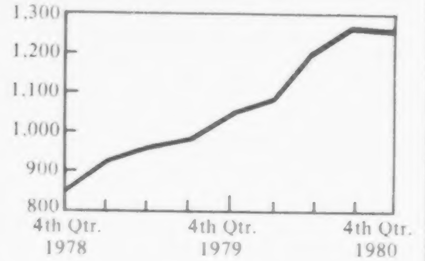
Help Wanted Advertisements



	Actual
Jan.	385
Feb.	403
Mar.	445
1st Quarter '81 Average Actual	411
Average Seasonally Adjusted	497
Percent change, seasonally adjusted basis from	
1st Quarter '80	–12.2%
4th Quarter '80	15.0%

Consumers

Total Personal Income ($1,000,000)



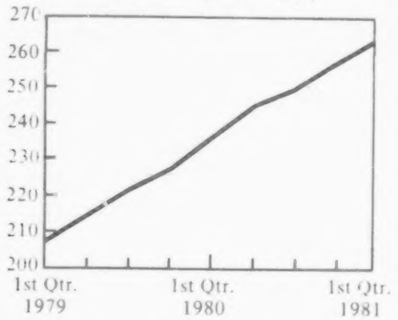
	Actual
Oct.	426
Nov.	428
Dec.	410
Total Actual	1,264
Total Seasonally Adjusted	1,265

Percent change, seasonally adjusted basis from

4th Quarter '79	20.6%
3rd Quarter '80	−0.8%

4th Qtr. actual as percent of U.S. actual .220%

U.S. Consumer Price Index (1967 = 100)

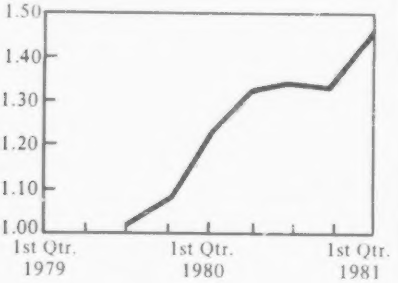


	Actual
Jan.	260.7
Feb.	263.5
Mar.	265.1
1st Quarter '81 Average Actual	263.1

Point change, actual basis from

1st Quarter '80	26.5
4th Quarter '80	6.8

Gasoline Prices

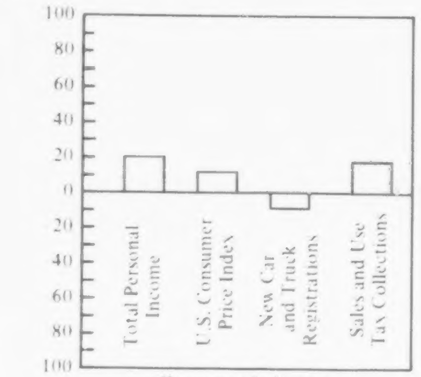


	Actual
Jan.	NR[2]
Feb.	$1.45
Mar.	NR[2]
1st Quarter '81 Average Actual	$1.45

Percent change, actual basis from

1st Quarter '80	18.1%
4th Quarter '80	9.0%

Consumers



Consumer Indicators
Annual Percentage Change

Wyoming's total personal income fell in the fourth quarter of 1980 for the first time in the *Wyoming Issues* data series. However, the fall was small—0.8 percent from last quarter. The annual change was a rise of 20.6 percent. Wyoming's personal income was .220 percent of the U.S. total in the fourth quarter.

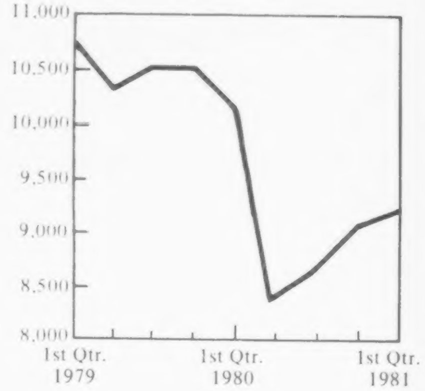
New car and truck registrations rose for the third quarter in a row after the steep decline in the second quarter of 1980. The seasonally adjusted total of 9,214 is 1.1 percent more than last quarter, and 9.5 percent less than one year ago. This is 13.7 percent less than two years ago. Gasoline price reporting has changed somewhat. Reports were made monthly during the period of sharp increases in gasoline prices starting in 1979. Now that prices seem to have stabilized somewhat during the last two quarters, the American Automobile Association has returned to their original method of sampling. Surveys of gas prices will be taken before each of the six major travel holidays—Easter, Memorial Day, July 4, Labor Day, Thanksgiving, and Christmas. If gas prices should begin to change markedly again, the monthly reports would be reinstated. The price of a gallon of unleaded gasoline at full service gas station in February was $1.45, 9.0 percent more than the fourth quarter 1980 average and 18.1 percent more than one year ago.

The U.S. consumer price index rose to 263.1, 6.8 points higher than last quarter. This is a rise of 2.7 percent over last quarter, and 11.2 percent over one year ago.

The Wyoming Cost of Living Index, calculated by the Research and Statistics Division of the Department of Administration and Fiscal Control, shows that the cost of living rose 10.18 percent over one year ago. Housing costs rose the fastest, at 12.22 percent, followed by: food—10.72 percent, apparel—10.37 percent, recreation and personal care—8.72 percent, medical—6.93 percent and transportation—6.43 percent. The southwest had the fastest growth rate at 14.69 percent, followed by: northeast—10.84 percent, southeast—10.13 percent, northwest—8.74 percent, and central 8.00 percent. As a comparison, prices in Lakewood, Colorado, rose 18.63 percent.

State sales and use tax collections rose an estimated 5.9 percent over last quarter, 18.8 percent more than one year ago.

New Car and Truck Registrations

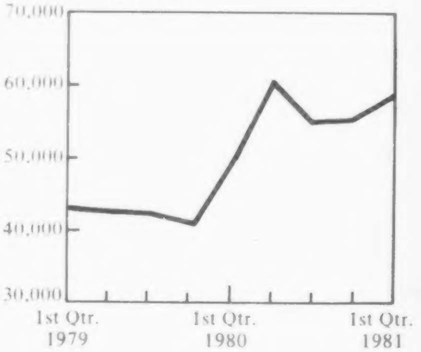


	Actual
Jan.	2,586
Feb.	2,111
Mar.	3,955
1st Quarter '81 Total Actual	8,652
Total Seasonally Adjusted	9,214

Percent change, seasonally adjusted basis from

1st Quarter '80	−9.5%
4th Quarter '80	1.1%

State Sales and Use Tax Collections ($1,000)



	Actual
Jan.	19,188
Feb.	18,054
Mar.	18,555[1]
1st Quarter '81 Total Actual	55,797
Total Seasonally Adjusted	58,796

Percent change, seasonally adjusted basis from

1st Quarter '80	18.8%
4th Quarter '80	5.9%

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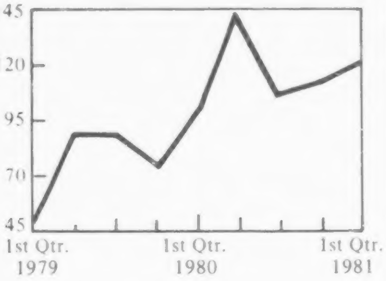
[1] Estimate

[2] No Report

All data are preliminary. Revisions appear in past quarterly trend data.

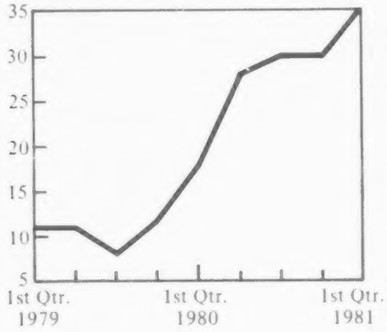
Business Conditions

Bankruptcies



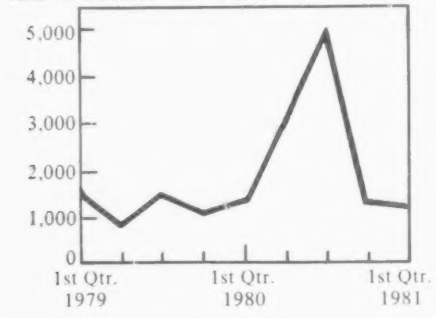
	Actual
Jan.	28
Feb.	44
Mar.	49
1st Quarter '81 Total Actual	121
Percent change, actual basis from	
1st Quarter '80	21.0%
4th Quarter '80	6.1%

Number of Business Failures

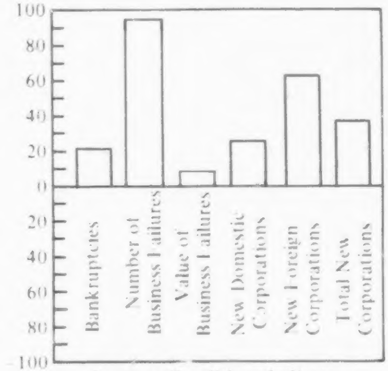


	Actual
Jan.	9
Feb.	10
Mar.	16
1st Quarter '81 Total Actual	35
Percent change, actual basis from	
1st Quarter '80	94.4%
4th Quarter '80	16.7%

Value of Business Failures ($1,000)



	Actual
Jan.	207
Feb.	446
Mar.	533
1st Quarter '81 Total Actual	1,186
Percent change, actual basis from	
1st Quarter '80	9.3%
4th Quarter '80	6.3%



Business Conditions

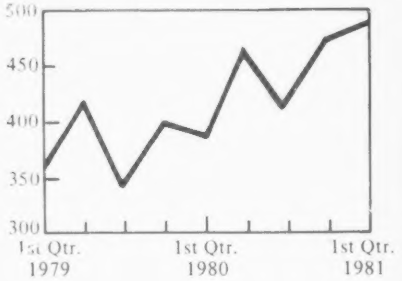
Business Conditions Indicators
Annual Percentage Change

The number of new corporations rose, for the second quarter in a row, to 787. This is a gain of 9.3 percent over last quarter and 38.3 percent from one year ago. Both domestic and foreign corporations rose over last quarter. Corporations formed in Wyoming rose 3.4 percent from last quarter, to 492. This number is 26.5 percent higher than one year ago. Corporations formed by out of state groups totaled 295, 20.9 percent more than last quarter and 63.9 percent more than one year ago. February was the worst month for new corporations this quarter, while March showed the largest number.

A total of 121 bankruptcies were registered in the first quarter of 1981. This is a rise of 6.1 percent from the fourth quarter of 1980, and 21.0 percent more than one year ago. The number of business failures also rose, to a new high of 35, 94.4 percent higher than just one year ago. This is a 16.7 percent change from last quarter. The value of the business failures fell from last quarter, however. The total of $1,186,000 is 6.3 percent less than last quarter and 9.3 percent more than one year ago.

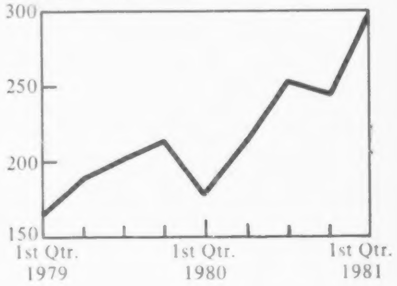
All data are preliminary.
Revisions appear in past quarterly trend data.

New Domestic Corporations



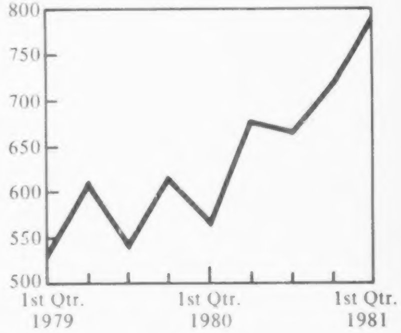
	Actual
Jan.	167
Feb.	128
Mar.	197
1st Quarter '81 Total Actual	492
Percent change, actual basis from	
1st Quarter '80	26.5%
4th Quarter '80	3.4%

New Foreign Corporations



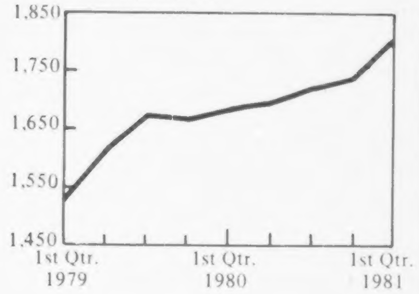
	Actual
Jan.	92
Feb.	83
Mar.	120
1st Quarter '81 Total Actual	295
Percent change, actual basis from	
1st Quarter '80	63.9%
4th Quarter '80	20.9%

Total New Corporations



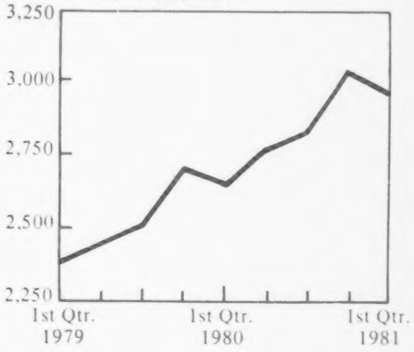
	Actual
Jan.	259
Feb.	211
Mar.	317
1st Quarter '81 Total Actual	787
Percent change, actual basis from	
1st Quarter '80	38.3%
4th Quarter '80	9.3%

Total Loans – State and National Banks (\$1,000,000)



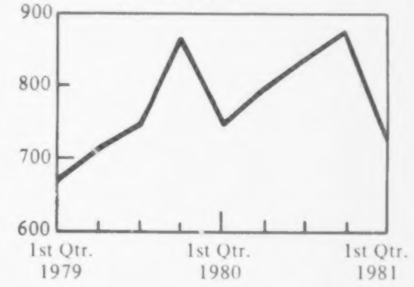
	Actual
1st Quarter '81	
Total Actual	1,809
Percent change actual basis from	
1st Quarter '80	7.8%
4th Quarter '80	3.7%

Total Deposits – State and National Banks (\$1,000,000)

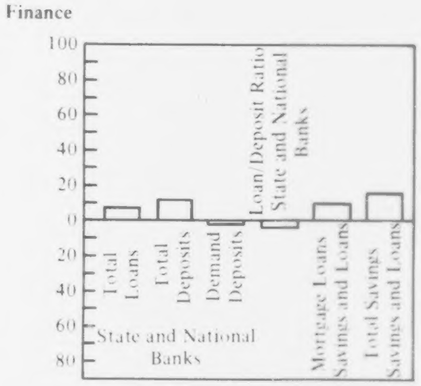


	Actual
1st Quarter '81	
Total Actual	2,968
Percent change, actual basis from	
1st Quarter '80	11.9%
4th Quarter '80	-2.2%

Demand Deposits – State and National Banks (\$1,000,000)



	Actual
1st Quarter '81	
Total Actual	736
Percent change, actual basis from	
1st Quarter '80	1.3%
4th Quarter '80	-16.2%



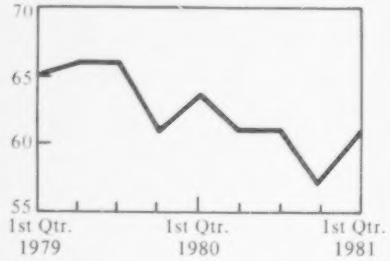
Finance Indicators
Annual Percentage Change

The amount of loans made by state and local banks in Wyoming continues to rise, despite high interest rates. Loans rose 3.7 percent over last quarter to \$1,808,747,000. This is 7.8 percent more than one year ago. Total deposits at state and national banks fell from last quarter, to \$2,968,348,000, a drop of 2.2 percent quarterly and a rise of 11.9 percent over one year ago. Demand deposits also fell, but more sharply. Demand deposits for the first quarter were \$736,161,000, 16.2 percent less than last quarter and 1.3 percent less than last year at this time.

The loan-deposit ratio for state and national banks rose to 61. This is up 7.0 percent from last quarter's low of 57, but is still 3.2 percent below the ratio for one year ago.

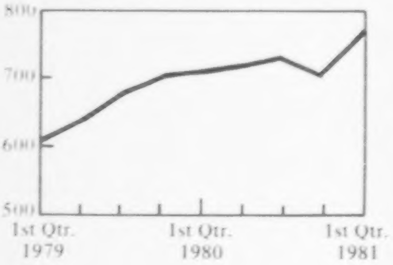
Mortgage loans at savings and loan institutions rose, after dropping last quarter. The rise was 10.1 percent over last quarter's figure, and 9.9 percent more than last year. Total savings also rose, and are now 16.7 percent higher than one year ago.

Loan/Deposit Ratio – State and National Banks (0.00)



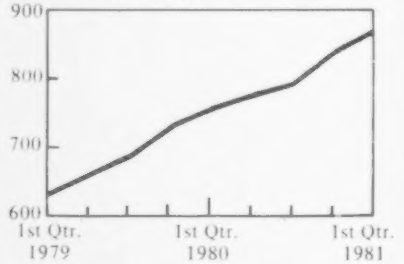
	Actual
1st Quarter '81	
Ratio Actual	61
Percent change, actual basis from	
1st Quarter '80	3.2%
4th Quarter '80	7.0%

Mortgage Loans – Savings and Loan Institutions (\$1,000,000)



	Actual
Jan.	771
Feb.	776
Mar.	781
1st Quarter '81	
Average Actual	776
Percent change, actual basis from	
1st Quarter '80	9.9%
4th Quarter '80	10.1%

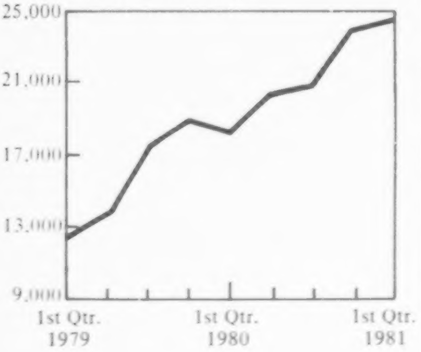
Total Savings – Savings and Loan Institutions (\$1,000,000)



	Actual
Jan.	864
Feb.	871
Mar.	889
1st Quarter '81	
Average Actual	875
Percent change, actual basis from	
1st Quarter '80	16.7%
4th Quarter '80	3.8%

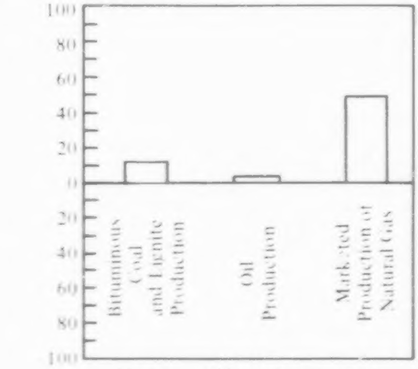
All data are preliminary.
Revisions appear in past quarterly trend data.

Bituminous Coal and Lignite Production
(1,000 Short Tons)



	Actual
Jan.	7,724[1]
Feb.	8,000
Mar.	8,257
1st Quarter '81	
Total Actual	23,981
Total Seasonally Adjusted	24,799
Percent change, seasonally adjusted basis from	
1st Quarter '80	33.8%
4th Quarter '80	3.3%
1st Qtr. actual as percent of U.S. actual	11.60%

Mining and Minerals



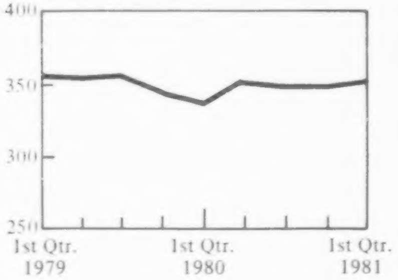
Mining and Minerals Indicators
Annual Percentage Change

Wyoming coal production continues its upward trend in the first quarter of 1981. First quarter total production shows an increase of 3.5 percent over last quarter, and a 33.8 percent increase over last year. First quarter Wyoming coal production amounted to 11.6 percent of the unadjusted U.S. coal production, an increase of almost .2 percent over the previous quarter.

Oil production rose only slightly over last quarter's figures, but was 3.8 percent above figures for a year ago. Wyoming oil production remains at about 4 percent of the U.S. total.

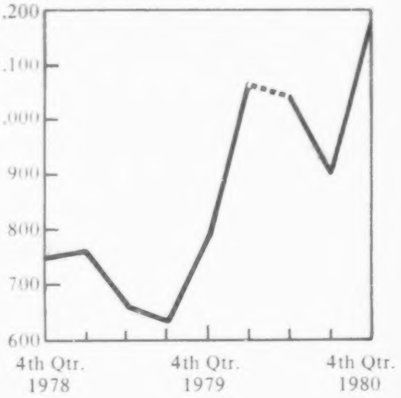
Natural gas production rose 30.3 percent in the first quarter, as compared to the previous quarter. This rise follows a two quarter decline in gas production, and represents a 49 percent increase in production over last year's figures.

Oil Production (1,000 BBLS/Day)



	Actual
Jan.	348
Feb.	348
Mar.	358
1st Quarter '81	
Average Actual	351
Percent change, actual basis from	
1st Quarter '80	3.8%
4th Quarter '80	.6%
1st Qtr. actual as percent of U.S. actual	4.10%

Marketed Production of Natural Gas
(MMCF/Day @ PSIA, 63°F)



	Actual
Oct.	1,129
Nov.	1,173
Dec.	1,219
4th Quarter '80	
Average Actual	1,174
Percent change, actual basis from	
4th Quarter '79	49.2
3rd Quarter '79	30.3
4th Qtr. actual as percent of U.S. actual	2.12%

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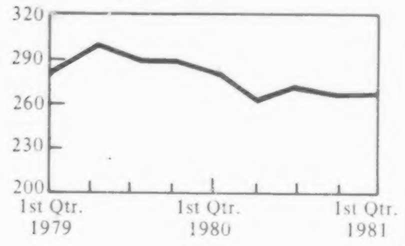
[1] Estimate

All data are preliminary.
Revisions appear in past quarterly trend data.

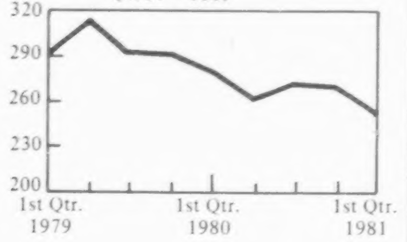
Agriculture and Forestry



Index of Prices Received for All Commodities by Wyoming Farmers and Ranchers (1967 = 100)

	Actual
Jan.	265
Feb.	264
Mar.	269
1st Quarter '81 Average Actual	266
Point change, actual basis from	
1st Quarter '80	-13
4th Quarter '80	4

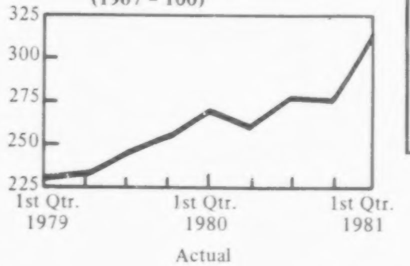
1st Qtr. actual as percent of U.S. actual
101.5%



Index of Prices Received for All Livestock and Products by Wyoming Farmers and Ranchers (1967 = 100)

	Actual
Jan.	250
Feb.	250
Mar.	258
1st Quarter '81 Average Actual	253
Point change, actual basis from	
1st Quarter '80	-29
4th Quarter '80	-19

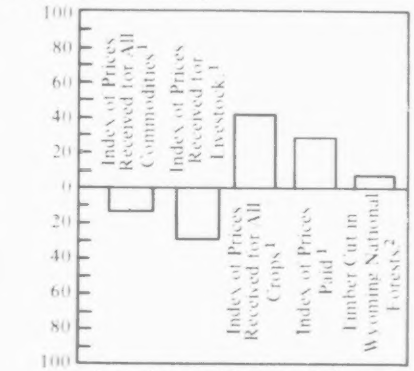
1st Qtr. actual as percent of U.S. actual
100.8%



Index of Prices Received for All Crops by Wyoming Farmers and Ranchers (1967 = 100)

	Actual
Jan.	318
Feb.	311
Mar.	307
1st Quarter '81 Average Actual	312
Point change, actual basis from	
1st Quarter '80	41
4th Quarter '80	37

1st Qtr. actual as percent of U.S. actual
113.4%



Agriculture and Forestry

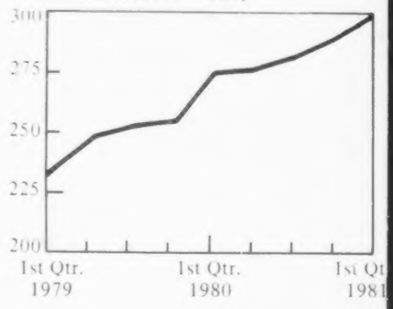
Agriculture and Forestry Indicators
Annual Point or Percentage Change

Wyoming farmers gained ground over ranchers in the first quarter of 1981. The composite index of prices received for all commodities rose slightly over last quarter. The rise of 1.5 percent (4 points) did not help the index enough to make up the loss suffered the past year. The index has fallen 4.7 percent, or 13 points, from this time last year. The Wyoming index is still slightly above the U.S. average. Ranchers lost ground in both the quarterly and annual comparisons. The index of prices received for livestock fell 19 points, or 7.0 percent from last quarter, and 29 points (10.3 percent) from last year. Wyoming ranchers lost ground compared to the rest of the country, also. The Wyoming index was 4.6 percent higher than the U.S. average last quarter. This quarter, it was a scant 0.8 percent higher.

On the other hand, farmers gained ground in the first quarter. Wyoming's prices received for crops is now 13.4 percent higher than the U.S. average, having risen 13.5 percent (37 points) over last quarter. This is 41 points, or 15.1 percent, higher than one year ago.

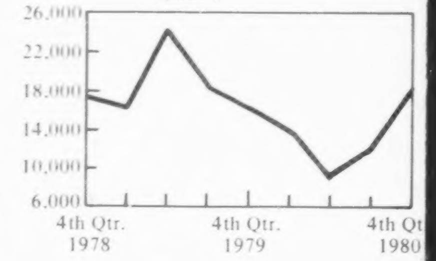
The index of prices paid by farmers and ranchers continues to increase. The first quarter index is 3.4 percent higher than one quarter ago, outpacing the CPI at 2.7 percent. On an annual figure, the index of prices paid is 10.7 percent, .5 percent less than the growth in CPI.

The amount of timber cut in Wyoming national forests increased again. The fourth quarter total is 18,109 MBF, 45.9 percent more than last quarter, and 9.5 percent more than one year ago.



Index of Prices Paid by U.S. Farmers and Ranchers (1967 = 100)

	Actual
Jan.	299
Feb.	300
Mar.	302
1st Quarter '81 Average Actual	300
Point change, actual basis from	
1st Quarter '80	29
4th Quarter '80	10



Timber Cut in Wyoming National Forests (MBF)

	Actual
4th Quarter '80 Total Actual	22,401
Total Seasonally Adjusted	18,109
Percent change, seasonally adjusted bais from	
4th Quarter '79	9.5%
3rd Quarter '79	45.9%

All data are preliminary.
Revisions appear in past quarterly trend data.

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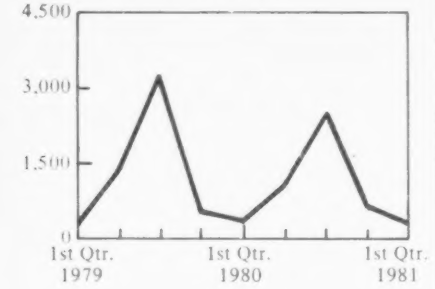
[1] Point change
[2] Percentage change

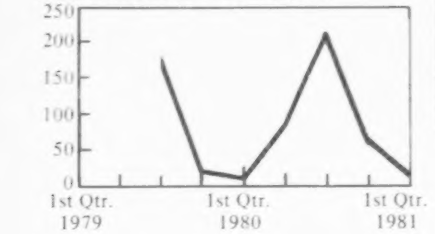
Tourism

National Park Visits – Yellowstone and Grand Teton (1,000)



	Actual
Jan.	85
Feb.	98
Mar.	98
1st Quarter '81	
Total Actual	281
Percent change, actual basis from	
1st Quarter '80	– 4.7%
4th Quarter '80	39.8%

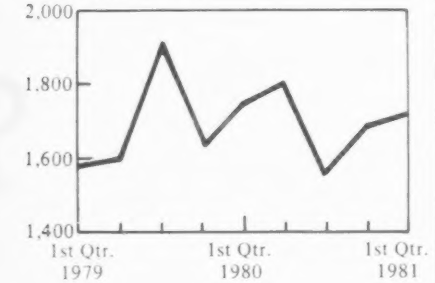
National Monument Visits – Ft. Laramie, Fossil Butte, Devil's Tower (1,000)



	Actual
Jan.	6
Feb.	5
Mar.	10
1st Quarter '81	
Total Actual	21
Percent change, actual basis from	
1st Quarter '80	90.9%
4th Quarter '80	60.7%

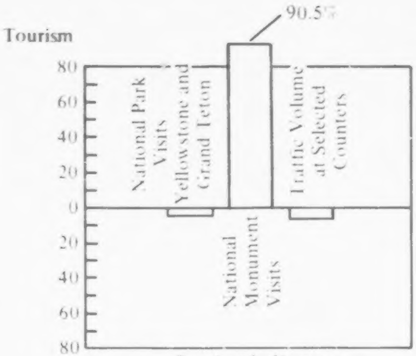
Utilities

Total Electrical Consumption (1,000,000 KWH)



	Actual
Jan.	651
Feb.	618
Mar.	557
1st Quarter '81	
Total Actual	1,825
Total Seasonally Adjusted	1,725
Percent change, seasonally adjusted basis from	
1st Quarter '80	2.1%
4th Quarter '80	1.3%

Tourism

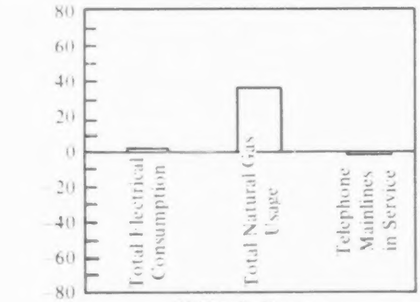


Tourism Indicators
Annual Percentage Change

Visitation in Grand Teton and Yellowstone National Parks showed the typical seasonal drop in the first quarter. A total of 281,000 people visited the two parks. This is a 39.8 percent fall from last quarter, and 4.7 percent less than last year. Visitation at the three national monuments (Ft. Laramie, Fossil Butte, Devil's Tower) was 21,000 people. This is a fall of 60.7 percent from last quarter, but a rise of 90.9 percent over last year's total of 11,000.

Traffic volume at selected counters rose from the fourth quarter by 9.1 percent. This is 6.7 percent less than the total of one year ago.

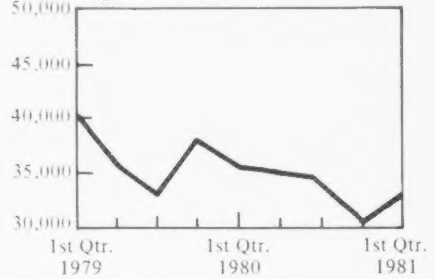
Utilities



Utility Indicators
Annual Percentage Change

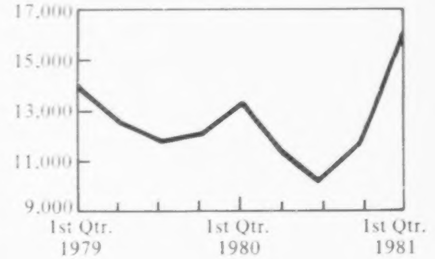
The number of telephones in service fell 1.1 percent when compared to fourth quarter 1980 figures. Even with this drop, the first quarter figures are 2.4 percent over those of one year ago. Electrical consumption, when seasonally adjusted, is 1.3 percent less than last quarter, but is 2.1 percent over the same period one year ago. Natural gas usage showed a dramatic increase of 37.4 percent over last quarter, when seasonally adjusted, and a somewhat smaller (20.2 percent) increase over last year.

Traffic Volume at Selected Counters[1] (Avg. Vehicles/Day)



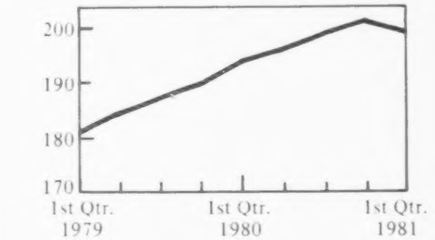
	Actual
Jan.	20,543
Feb.	20,316
Mar.	22,307
1st Quarter '81	
Average actual	21,055
Average Seasonally Adjusted	33,157
Percent change, seasonally adjusted basis from	
1st Quarter '80	-6.7%
4th Quarter '80	9.1%

Total Natural Gas Usage (MMCF)



	Actual
Jan.	6,623
Feb.	7,361
Mar.	6,029
1st Quarter '81	
Total Actual	20,013
Total Seasonally Adjusted	16,127
Percent change, seasonally adjusted basis from	
1st Quarter '80	37.4%
4th Quarter '80	20.2%

Telephone Mainlines in Service (1,000)



	Actual
Jan.	198
Feb.	199
Mar.	200
1st Quarter '81	
Average Actual	199
Percent change, actual basis from	
1st Quarter '80	-1.1%
4th Quarter '80	2.4%

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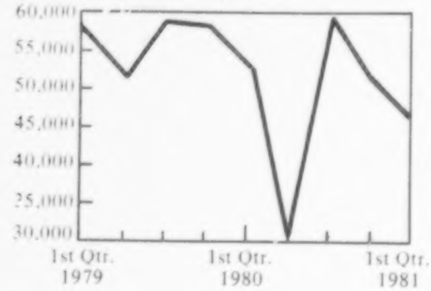
[1] Changes have been made in reporting method.

All data are preliminary.

Revisions appear in past quarterly trend data.

Construction

Total Residential Building Value ($1,000)



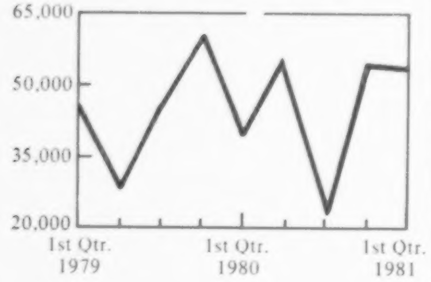
	Actual
Jan.	9,300
Feb.	10,400
Mar.	18,300
1st Quarter '81 Total Actual	38,000
Total Seasonally Adjusted	46,740

Percent change, seasonally adjusted basis from

1st Quarter '80	-11.6%
4th Quarter '80	-10.0%

1st Qtr. actual as percent of U.S. actual
.284%

Total Nonresidential Building Value ($1,000)



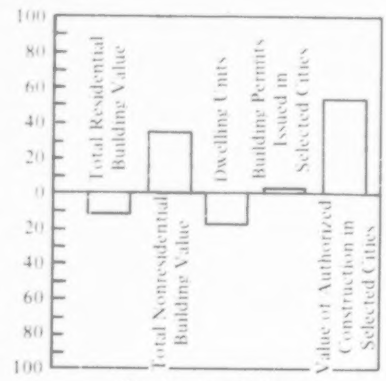
	Actual
Jan.	2,400
Feb.	8,900
Mar.	34,300
1st Quarter '81 Total Actual	45,600
Total Seasonally Adjusted	54,221

Percent change seasonally adjusted basis from

1st Quarter '80	35.7%
4th Quarter '80	-1.0%

1st Qtr. actual as percent of U.S. actual
.336%

Construction



Construction Indicators
Annual Percentage Change

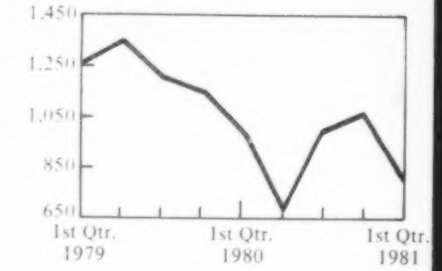
The construction industry shows promise in some places in the state, but not in others. *Wyoming Issues* receives reports on building permits from 21 cities in the state. These towns showed an increase in building, while other sources show a drop in the statewide totals. Total residential building value fell in both the quarterly and annual comparisons. The total, $46,740,000, is 10.0 percent less than last quarter, and 11.6 percent less than one year ago. The Wyoming first quarter total rose to .284 percent of the U.S. total. Total nonresidential building value fell slightly from last quarter, to $54,221,000. This is 35.7 percent more than one year ago, and .336 percent of the U.S. total.

The number of new dwelling units started in the first quarter also fell. The seasonally adjusted total is 817. This is 24.2 percent less than last quarter and 17.4 percent less than last year. Wyoming had .252 percent of the U.S. total number of new dwelling units.

The number of building permits issued in the cities queried by *Wyoming Issues* rose 25.8 percent over last quarter. This seasonally adjusted total of 3,871 is 3.2 percent more than in the first quarter of 1980. The value of the construction authorized by these permits was $83,125,000, 34.6 percent more than last quarter, and 52.1 percent more than last year.

All data are preliminary. Revisions appear in past quarterly trend data.

New Dwelling Units



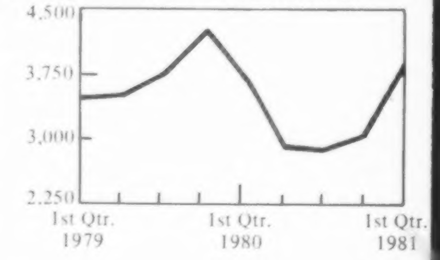
	Actual
Jan.	174
Feb.	194
Mar.	352
1st Quarter '81 Total Actual	720
Total Seasonally Adjusted	817

Percent change, seasonally adjusted basis from

1st Quarter '80	-17.4%
4th Quarter '80	-24.2%

1st Qtr. actual as percent of U.S. actual
.252%

Building Permits Issued in Selected Cities

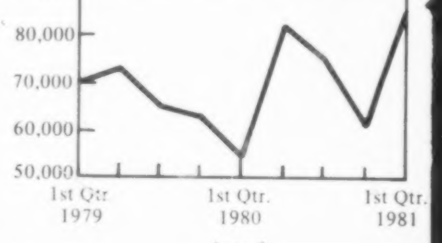


	Actual
Jan.	808
Feb.	933
Mar.	1,286
1st Quarter '81 Total Actual	3,027
Total Seasonally Adjusted	3,871

Percent change, seasonally adjusted basis from

1st Quarter '80	3.2%
4th Quarter '80	25.8%

Value of Authorized Construction in Selected Cities ($1,000)



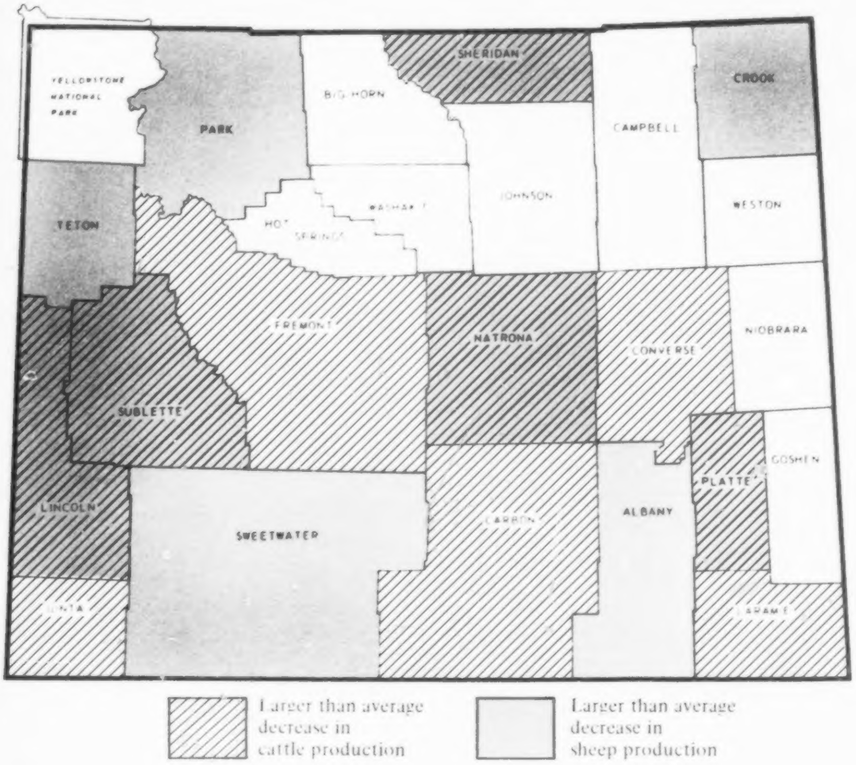
	Actual
Jan.	11,283
Feb.	9,159
Mar.	48,552
1st Quarter '81 Total Actual	68,994
Total Seasonally Adjusted	83,125

Percent change, seasonally adjusted basis from

1st Quarter '80	52.1%
4th Quarter '80	34.6%

Socioeconomic Indicators–

1975 and 1980 Figures Show Decline in Cattle Production


YELLOWSTONE NATIONAL PARK
PARK
BIG HORN
SHERIDAN
CAMPBELL
CROOK
TETON
HOT SPRINGS
WASHAKIE
JOHNSON
WESTON
FREMONT
NATRONA
CONVERSE
NIOBRARA
SUBLETTE
GOSHEN
PLATTE
LINCOLN
SWEETWATER
CARBON
ALBANY
UINTA
LARAMIE
▨ Larger than average decrease in cattle production
☐ Larger than average decrease in sheep production

by Kim Keeney

Livestock production has fallen in Wyoming in recent years. Here, we have compared cattle and sheep on Wyoming ranches in 1975 and 1980. All figures are for January 1 of the respective year.

Cattle on Wyoming ranches fell from 1,690,000 on January 1, 1975, to 1,340,000, on January 1, 1980. This represents a statewide drop of 20.7 percent. Ten counties had a drop of even more than this level. Natrona county showed the largest drop – 52.3 percent, followed by: Lincoln, Uinta, Fremont, Sublette, Carbon, Sheridan, Laramie, Platte and Converse. Only Washakie and Albany counties saw growth in cattle, and Teton county remained unchanged. Mining would seem to be the reason for the decreasing herds, as these counties have seen some of the fastest increases in mining in the state.

Sheep herds also dropped in this time period, from 1,190,000 to 960,000, a drop of 19.3 percent. Again, ten counties had above average drop in herd size. Teton county had the biggest drop, 66.7 percent. Following were: Sweetwater, Lincoln, Sublette, Park, Natrona, Platte, Albany, Sheridan, and Crook. But unlike the cattle statistics, six counties showed increases in sheep herds. The most substantial of these was Goshen county, with an increase of 150 percent.

WI

	Cattle and Calves			Sheep		
	1975	1980	% Change	1975	1980	% Change
Albany	48,000	50,000	3.1	12,000	9,000	25.0
Big Horn	62,500	52,000	16.8	49,000	60,000	22.4
Campbell	84,000	73,000	13.1	97,000	79,000	18.6
Carbon	123,000	91,000	26.0	115,000	98,000	14.8
Converse	80,000	63,000	21.2	100,000	95,000	5.0
Crook	78,000	64,000	17.9	49,000	37,000	24.5
Fremont	117,000	79,000	32.5	48,000	39,000	18.8
Goshen	110,000	101,000	8.2	5,200	13,000	150.0
Hot Springs	45,000	40,000	11.1	13,500	16,000	18.5
Johnson	73,000	68,000	6.8	125,000	133,000	6.4
Laramie	78,000	58,000	25.6	19,000	17,000	10.5
Lincoln	63,000	34,000	46.0	57,000	27,000	52.6
Natrona	88,000	42,000	52.3	181,000	113,000	37.6
Niobrara	72,000	65,000	9.7	31,000	26,000	16.1
Park	83,000	72,000	13.3	26,000	14,000	46.2
Platte	110,000	85,000	22.7	9,800	7,000	28.6
Sheridan	108,000	80,000	25.9	26,500	20,000	24.5
Sublette	95,000	68,000	28.4	3,300	1,600	51.5
Sweetwater	20,500	20,000	2.4	125,000	52,000	58.4
Teton	17,000	17,000	0.0	1,200	400	66.7
Uinta	46,000	31,000	32.6	50,500	49,000	3.0
Washakie	36,000	39,000	8.3	35,500	41,000	15.5
Weston	52,000	48,000	7.7	10,500	13,000	23.8
State	1,690,000	1,340,000	20.7	1,190,000	960,000	19.3

Socioeconomic Indicators –

Labor Force and Unemployment Statistics Compared for 1977 and 1981

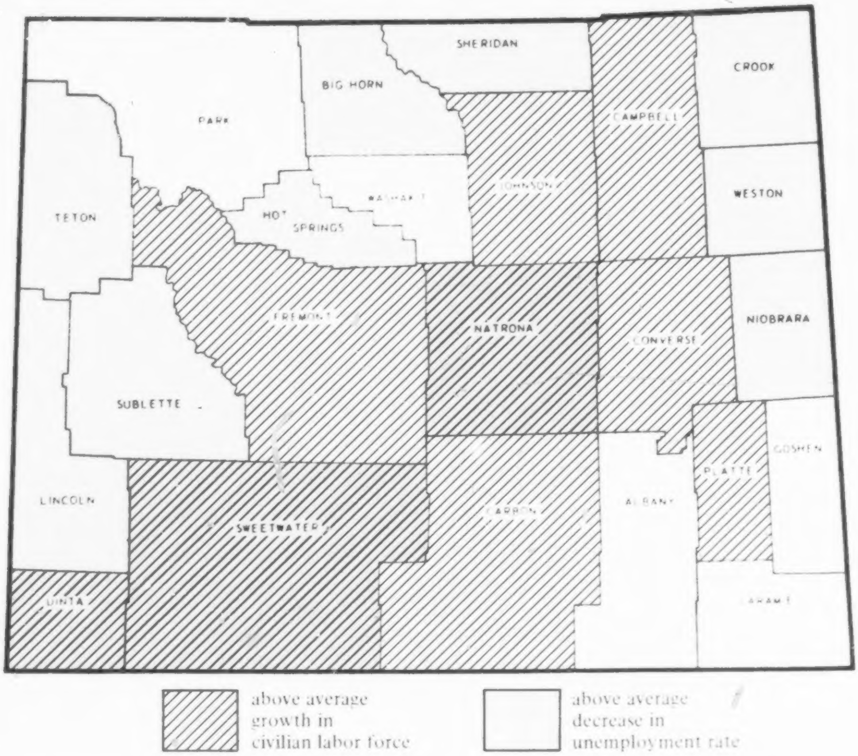
by Kim Keeney

The employment situation in Wyoming has changed rather substantially in the past few years. Mineral development has especially affected some counties, while leaving other virtually unchanged. A comparison is made here of civilian labor force and unemployment statistics in each county in 1977 and 1981. The statistics represent the average for each category for January, February, and March.

The statewide labor force rose from 173,354 people in 1977 to 221,719 in 1981, representing an overall growth rate of 27.9 percent. Nine counties had growth rates in excess of this. Uinta County's rate of 83.4 percent was the largest, followed by Converse, Platte, Campbell, Carbon, Sweetwater, Johnson, Fremont, and Natrona. Niobrara is the only county which had a decrease in the number of laborers.

Eleven counties had changes in the unemployment rate, showing improvement of more than 0.6 of a point, the statewide average. Teton County showed the most improvement, dropping 2.9 points, from 15.3 percent unemployment to 12.4 percent. The other ten counties with improved unemployment figures are Uinta, Big Horn, Crook, Niobrara, Lincoln, Sublette, Sweetwater, Hot Springs, Park and Weston.

Only three counties had both an increase in labor force and a decrease in unemployment. They are Uinta, Sweetwater, and Natrona.


SHERIDAN
CROOK
BIG HORN
PARK
CAMPBELL
WASHAKIE
JOHNSON
WESTON
TETON
HOT SPRINGS
FREMONT
NATRONA
CONVERSE
NIOBRARA
SUBLETTE
GOSHEN
PLATTE
LINCOLN
SWEETWATER
CARBON
ALBANY
UINTA
LARAMIE
▨ above average growth in civilian labor force
☐ above average decrease in unemployment rate

	Labor Force		Percent Growth	Unemployment Rate		Point Change
	1977	1981		1977	1981	
Albany	12,742	12,872	1.0%	4.0	6.9	2.9
Big Horn	4,682	5,039	7.6%	5.7	3.9	1.8
Campbell	7,965	13,506	69.6%	3.7	4.7	1.0
Carbon	6,951	10,605	52.6%	3.5	4.5	1.0
Converse	4,656	7,971	71.2%	3.6	4.6	1.0
Crook	1,970	2,193	11.3%	4.8	3.1	1.7
Fremont	13,252	17,949	35.4%	5.2	6.9	1.7
Goshen	5,491	5,492	0.0%	5.4	7.5	2.1
Hot Springs	2,113	2,548	20.6%	2.5	2.4	0.1
Johnson	2,406	3,294	36.9%	3.6	5.6	2.0
Laramie	24,454	29,832	22.0%	4.9	5.7	0.8
Lincoln	4,195	4,736	12.9%	8.8	8.0	0.8
Natrona	28,649	37,775	31.9%	3.0	3.8	0.8
Niobrara	1,247	1,141	8.5%	4.6	3.3	1.3
Park	9,135	9,604	5.1%	4.0	4.0	0.0
Platte	3,378	5,780	71.1%	4.1	9.3	5.2
Sheridan	8,572	10,023	16.9%	5.3	7.5	2.2
Sublette	1,710	1,996	16.7%	3.4	2.6	0.8
Sweetwater	15,279	20,963	37.2%	4.9	4.6	0.3
Teton	4,335	5,417	25.0%	15.3	12.4	2.9
Uinta	3,493	6,407	83.4%	5.3	2.8	2.5
Washakie	3,878	4,475	15.4%	3.6	4.3	0.7
Weston	2,705	2,946	8.9%	4.8	5.3	0.5
State	173,354	221,719	27.9%	4.7	5.3	0.6

Forecasts '81 – Forecasting for Wyoming's economy

by Bruce Dougan

National Outlook

On the national level, economic indicators appear to point to rather slow economic growth in the months ahead. One of the biggest areas of weakness in the U.S. economy is construction. Citicorp Real Estate Inc., reports that "Financing for apartments and commercial properties is drying up." The major explanation for this loss of financing is reported to be the high cost of commercial mortgage funds and their availability. Commercial mortgage fund suppliers are shifting their funds into lower risk and large yield shorter-term money markets. This high cost of construction money forces builders to think twice before beginning new projects. Even if the builder decides to go ahead and pay high interest rates, there is no assurance that the money will be available to procede with the financing. From a peak in housing starts in January, housing starts in April fell 20 percent. The Commerce Department reports that new one-family homes sold at an annual rate of 441,000 in April. This amounts to a 30 percent drop from the figures generated last summer.

The Commerce Department's composite index of leading indicators rose strongly (1.8 percent) in March, followed by a smaller rise of .4 percent in April. The drop in the index appears to forecast a slower growth pattern in the months ahead. Another statistic that demands concern is the fact that orders for consumer goods and materials is no greater than that of last October (if figured in constant dollars). A flat demand in this area will led to slow, if not nonexistent, growth potential.

The national unemployment rate in April stayed at 7.3 percent, unchanged from March figures. Teenagers and minorities were the two groups with the highest unemployment, 19.1 percent and 13.2 percent respectively. A decrease in these unemployment rates does not appear likely in the near future, since a generally slow economic growth pattern will not add significantly to employment opportunities.

Michigan had the highest unemployment rate of the nation, standing at 13.2 percent in April. This was down from the previous month. The automobile industry, so important to the economy of Michigan, slowly picked up over the spring months. The hoped-for rally in car sales this year does not seem to be taking place, and it appears that high interest rates are preventing the hoped-for upswing in the automobile industry.

The increase in U.S. interest rates has helped to push the dollar to a new three-year high against the West German mark. High interest rates do not appear to be the only reason for this upturn in interest in the U.S. dollar. In the eyes of many Europeans, the United States looks remarkably stable in terms of its social and monetary outlook. Terrorism, labor unrest, and leftest incursion on traditional ground have caused many Europeans to invest in U.S. interests. Although economic conditions in the United States could be improved, reflection upon the reason behind increased foreign interest in the U.S. economy might lead to increased confidence on the home front confidence that perhaps conditions are not quite as bad as they could be, and that solutions to our problems may well be fostered by the type of society we live in and do business in.

Wyoming Outlook

Statewide, the seasonally adjusted unemployment rate for April was 4.9 percent, down slightly from March but still up 1.1 percent from April of last year. Compared with the rest of the U.S., Wyoming ranked 43rd for March unemployment levels. Continued layoffs in the uranium and construction industries contribute heavily to this unemployment situation. The Wyoming labor force continues to grow in 1981, up over 5 percent at an annual rate, twice the national gain. Uinta, Sweetwater, and Natrona Counties led the state in labor force growth on an annual basis. Growth in the labor force will continue, as mineral, transportation and public utility, and manufacturing interests continue to build. A boom in the southwestern part of the state continues, with Uinta County registering the largest percentage growth in labor force in the state (26 percent).

The budget cuts proposed by the Reagan administration will effect many community development programs in Wyoming. The newsletter, *Wyoming Progress Report*, published by the Department of Economic Planning and Development, lists several parts of the state of Wyoming that will be affected. Among these are programs in the Technical Assistance program, which provides grants to localities for improving management capacity. The current program will end in March 1982. The Farmers Home Administration Section '601' program will probably be removed entirely. The loss of this program will affect Wyoming's impacted areas the greatest. Budget cuts by the federal government will continue to place additional demands on the state government to take up some of the loss in funding and revenue that the federal government has previously provided.

Wyoming workers have gained in real income in the past year. Wages rose 13.8 percent from fourth quarter 1979. During this same time period, the Consumer Price Index rose 12.6 percent Growth prospects in general appear to be good for Wyoming. High interest rates will continue to depress sensitive industries such as construction. If an easing of these interest rates does occur, real economic growth may begin to occur. This is provided, of course, that inflationary trends remain stable.

Summer Agricultural Outlook

Robert D. Carver
University of Wyoming

Weather plays the dominate role in the agricultural outlook for Wyoming producers in 1981. Although very little of our crop and livestock production is sold in the summer months, it is during this period when production materializes and ultimately affects prices farmers receive the remainder of the year.

The overall acreage seeded to 1981 crops is projected to increase 2 percent over 1980 levels. With average yields, wheat production should be record large, and production of other crops would increase sharply from last year's drought-reduced levels. Thus, the real question about 1981 crop production centers on weather.

After a mild winter and a dry spring, moisture patterns across the U.S. improved considerably in May. While moisture was adequate to germinate seeds and start plants growing, frequent rains throughout the growing season will be necessary to achieve high yields.

Livestock producers throughout much of the nation were hurt by drought last year, and pastures and ranges have not fully recovered. Without necessary summer rains, the carrying capacity of these ranges will be reduced. This could force many cattle to slaughter directly off grass instead of the usual trip through the feedlots, disrupting beef supply patterns. This could halt or slow the buildup in cattle herds, altering the pattern of beef supplies for the next several years.

The current USDA official projection for 1981 corn production, released May 12, is 7.7 billion bushels. The projection is based on an anticipated yield of 103 bushels per acre from 75 million acres harvested for grain. This would be 7 bushels per acre less than the record yield per acre for 1979 but about 11 bushels above the average for the past 10 years and 12 bushels more than last year.

Although hay stocks in the West are down 19 percent from a year ago, Wyoming reported hay carryover up 21 percent, at 592,000 tons. Soil moisture supplies were improved by general rains over much of the area in May; however, high production of feed and forage in 1981 is critically important to financially stressed livestock producers and feeders.

Dry weather or other threats to the anticipated increase in crop production would be expected to cause sharp increases in grain and hay prices. The large carryover stocks of feed and roughage that tempered price rises during last year's drought have been substantially depleted, and prices through the growing season this summer are likely to be quite sensitive to changes in crop production prospects.

Total supplies of feeder cattle outside feedlots this spring were estimated to be more than 4 percent larger than in 1980. This increase is a result of the sharply larger 1980 calf crop. These calves will be long yearlings by fall. Unless feedlots continue placing cattle at levels dramatically above 1980 in coming months, yearling supplies will be significantly larger this fall than they were a year earlier.

Beef supplies are projected to be higher as we move into fall, resulting in a softening for the demand for feeder cattle. The combination of larger supplies and weaker demand may prove to be extremely negative for calves and yearling feeder cattle prices this fall.

Prices for yearling feeder steers are expected to remain under pressure into the summer period. That pressure may be quite severe if there are any weather problems limiting grain and forage production in the U.S. Choice 600-700 pound yearling steers are expected to trade in the mid-$60 level throughout most of the summer.

Calf prices are expected to move lower from current levels. If interest and feed costs continue high, calf prices may be discounted to both fed and yearling cattle prices by fall.

Summer Minerals Outlook

Staff, Geological Survey of Wyoming

Diamonds

According to the "Thirty-ninth Biennial Report of the State Geologist, 1979-1980," Cominco American, Inc., continued to assess the Fish Creek property of southeastern Wyoming for diamond mineralization. During 1980, Cominco extracted 11 bulk samples, totaling 4500 tons, from the Schaffer kimberlite complex. The samples were trucked to the company's diamond extraction test plant, which is presently under construction in Fort Collins, Colorado.

In Colorado, the Minerals Division of Superior Oil Company reportedly continued to test kimberlites on their Sloan property, located about 10 miles south of the Wyoming-Colorado state line. Construction on a diamond-extraction plant on the property was also underway.

The Geological Survey of Wyoming continued to examine more than 500 stream sediment samples collected for the Survey's diamond-bearing kimberlite exploration program in 1980. The results on these stream sediment samples and on diamond testing of kimberlite samples will probably not be made public until after the 1981 field season. However, a preliminary report on geological mapping and geophysical surveys conducted during the 1979-1980 field seasons is presented in the Wyoming Geological Survey's Preliminary Report No. 18, "Geological and Geophysical Investigations for Kimberlite in the Laramie Range, Southeastern Wyoming," which is presently in press.

Uranium

The uranium market continued its decline with the price for a pound of yellowcake dropping to a new low of $25 per pound. In the wake of depressed uranium economics, Federal-American Partners announced that they will suspend uranium mining activities in the Gas Hills District, and layoff more than 200 employees. To date, more than 1,000 uranium employees in Wyoming have been affected by the poor market conditions. So far, layoffs have occurred in both Fremont and Converse counties. Additionally, numerous uranium exploration and development activities have been suspended throughout the state with no resumption likely in the near future.

In a move to help Wyoming's ailing uranium industry, Governor Herschler appointed an ad hoc panel which is tasked with finding ways to stimulate the state's uranium industry. Because at least one industry group sees the easing of reclamation and environmental standards as at least a partial solution, the Governor made it clear at the onset that he is determined to keep mining regulations uniform for all mining industries and that the state's regulatory agencies cannot waive environmental standards promulgated by law.

Trona

Wyoming continued to rank as the world's largest producer of trona. Four mines and five refineries continued producing sodium bicarbonate from the trona, with a fifth mining operation under construction near Green River. Additionally, Vulcan Minerals Company and FMC Corporation are testing a solution mining technique for trona extraction. If solution mining is successful, it will provide a technique to mine trona beds that are presently not economically mineable.

Precious and Base Metals

Exploration for precious and base metals is continuing throughout the state. Amax Exploration continued a low-keyed exploration program in the vicinity of their Kirwin porphyry copper deposit in the southern Absaroka Mountains. Timberline Minerals reported significant copper-moly mineralization about 50 miles to the south of Cody. Conoco Inc., continued to evaluate volcanogenic massive sulfides in southeastern Wyoming.

During the past year, several companies discussed the possibility of exploring Wyoming's greenstone belts for gold mineralization, but to date only the South Pass-Atlantic City area in the southern Wind River Range has been examined in any detail.

Nedlog Technology Group of Arvada is developing a hydro-metallurgical plant on the south side of Laramie in the Monolith complex. The plant is designed to extract copper, lead, zinc, silver, gold, iridium, germanium, and arsenic from flue dust produced from copper smelters located outside of Wyoming.

Coal

By late May, there was still no evidence that any Wyoming coal was headed east as a result of the coal strike. As the strike entered its third month, the coal producers and railroads in Wyoming remained poised and ready for any demands put on them.

The U.S. Department of Interior's plans for a cooperative lease approach in its upcoming (October, 1981) Rawlins area lease sale was tempered somewhat when Rocky Mountain Energy Company decided not to offer its checkerboarded railroad lands as part of the China Butte tract. There is still a chance that Interior can use the cooperative approach on the Red Rim tract. That tract also features alternating Rocky Mountain Energy lands and federal lands. It is also still uncertain if cooperative leasing procedures will allow private leaseholders, such as Rocky Mountain Energy, to bid on the combined tract.

Shortly after the Powder River Regional Coal Team recommended a target of 1.1-1.2 billion tons for the Powder River federal coal lease sale in 1982, Secretary of Interior James Watt publicly announced his preference for a higher target, somewhere between the Coal Team's recommendation and 2.5 billion tons. Although Watt's intentions in this matter remain unclear, his comments have raised some concern about his views on the Regional Coal Team approach to setting leasing targets.

Interest in the proposed lease sale is obvious. There are already at least thirteen expressions of interest filed. Collectively, the interested companies are seeking close to 5 billion tons of coal. Several major oil companies are apparently interested in the same tracts. Exxon, Gulf, Sunoco, Atlantic Richfield, and Shell Oil all have expressed interest in the sale area although they have not all revealed their actual needs. Other interested companies are U.S. Steel, Ranchers Energy, and Total Energy. Total Energy is reportedly a joint venture of three smaller companies in Gillette, Wyoming.

In a relatively fast move, Gulf Oil's subsidiary, Pittsburg and Midway Coal Mining Company, bought Kemmerer Coal Company. The price was reportedly $325 million. Kemmerer Coal Company, a family-owned Wyoming corporation, has mined coal in Wyoming since 1897. Although Gulf Oil has some small federal coal leases in Wyoming's Powder River Basin, the acquisition of Kemmerer's open pit mines near Kemmerer mark Gulf's entry into active mining in Wyoming. Last year's production from Kemmerer's two open pit mines was 4.1 million tons. Of that production, 2.4 million tons was burned in Utah Power and Light Company's nearby Naughton power plant. The remaining 1.7 million tons of Kemmerer's 1980 production went to trona plants at Green River, Wyoming, and to other utility, industrial, and retail users.

Proposals to use water from South Dakota's Oahe Reservoir in Energy Transportation System's coal slurry pipeline were set back when the South Dakota legislature defeated a bill authorizing out-of-state use of that water. Delegations from both Wyoming and South Dakota, however, are meeting to discuss alternative water supplies for the planned pipeline. Energy Transportation System is presently authorized to annually withdraw up to 20,000 acre-feet of groundwater from the Madison Limestone to mix with coal in the slurry pipeline. As construction of the pipeline draws closer, opposition to the use of Madison groundwater has once again intensified. Municipal, agricultural, environmental, and citizen groups from both Wyoming and South Dakota are asking that the pipeline company use alternative water sources.

Oil and Gas

Wyoming's first competitive mineral lease sale is planned for early June. The Wyoming State Land Board is offering 37 oil and gas tracts for lease by competitive bidding. The minimum acceptable bid for any tract is set at $200 per acre. This experimental lease sale comes after a comment period and public hearings where independent oil men, petroleum associations, and major oil companies voiced their objections. Mining companies, however, seemed pleased with the prospect.

After reviewing comments by all interested parties, the State Land Board decided to proceed with its plans for a competitive lease sale on a trial basis. Tracts for the experimental sale were selected and withheld from earlier simultaneous drawings. Monthly simultaneous drawings will continue, while the new procedure is evaluated. The competitive lease sale is one part of the State Land Board's overhaul of Wyoming's mineral leasing procedures.

In May, Chevron announced it would construct a pipeline to carry molten sulfur from its new sour gas processing plant in southwestern Wyoming to a railroad terminal some 20 miles away. The pipeline will be electrically heated and elevated above the ground. Chevron will ship up to 1,000 tons of sulfur a day through the line. When it is built, Chevron's pipeline may be the largest of its kind in the United States. There are no plans for a neighboring sour gas processing plant, owned by Amoco, to build another line. Amoco, however, reportedly will truck their sulfur to the same rail terminal as Chevron.

Data Sources

1. Employment	Employment Security Commission of Wyoming
2. Wages and Employment	
Average Weekly Earnings	Employment Security Commission of Wyoming
Average Weekly Hours	Employment Security Commission of Wyoming
Average Hourly Earnings	Employment Security Commission of Wyoming
Job Placements – Nonagricultural	Employment Security Commission of Wyoming
Initial Unemployment Insurance Claims	Employment Security Commission of Wyoming
Help Wanted Advertisements	Compiled by Institute for Policy Research
3. Mining and Minerals	
Bituminous and Lignite Coal Production	Energy Data Reports, U. S. Dept. of Energy
Oil Production	*The Oil and Gas Journal.* The Petroleum Publishing Co. Tulsa, OK. (Copyrighted)
Natural Gas Production	Energy Data Reports, U.S. Dept. of Energy
4. Agriculture and Forestry	
Index of Prices Paid by Farmers and Ranchers (U.S.)	Wyoming Cooperative Crop and Livestock Reporting Service
Index of Prices Received by Farmers and Ranchers All Commodities (Wyo.)	Wyoming Cooperative Crop and Livestock Reporting Service
Index of Prices Received by Farmers and Ranchers for Livestock and Products (Wyo.)	Wyoming Cooperative Crop and Livestock Reporting Service
Index of Prices Received by Farmers and Ranchers All Crops (Wyo.)	Wyoming Cooperative Crop and Livestock Reporting Service
Lamb and Calf Crops	Wyoming Cooperative Crop and Livestock Reporting Service
Timber Cut in Wyoming National Forests	U.S. Forest Service
5. Construction	
Total Residential Building Value	F.W. Dodge Co. (Further reproduction prohibited.)
Total Nonresidential Building Value	F.W. Dodge Co. (Further reproduction prohibited.)
New Dwelling Units	F.W. Dodge Co. (Further reproduction prohibited.)
Value of Authorized Construction	Compiled by Institute for Policy Research
Number of Building Permits	Compiled by Institute for Policy Research
6. Finance	
Total Loans (State and National Banks)	Wyoming State Bank Examiner
Total Deposits (State and National Banks)	Wyoming State Bank Examiner
Demand Deposits (State and National Banks)	Wyoming State Bank Examiner
Loan Deposit Ratio (State and National Banks)	Wyoming State Bank Examiner
Mortgage Loans (Savings and Loans)	Federal Home Loan Bank, Seattle
Total Savings (Savings and Loans)	Federal Home Loan Bank, Seattle
7. Consumers	
State Sales and Use Tax Collections	Wyoming Dept. of Taxation & Revenue
Estimated Retail Sales	Estimated by Institute for Policy Research
U.S. Consumer Price Index	U.S. Dept. of Commerce, Bureau of Economic Analysis, *Survey of Current Business*
Personal Income	*Business Week*
New Car and Truck Registrations	R.L. Polk & Co. (Further reproduction prohibited.)
Gasoline Price	Wyoming AAA
8. Business Conditions	
New Domestic Corporations	Wyoming Secretary of State
New Foreign Corporations	Wyoming Secretary of State
Total New Corporations	Wyoming Secretary of State
Bankruptcies	Cheyenne Credit Bureau
Business Failures	Cheyenne Credit Bureau
Value of Business Failures	Cheyenne Credit Bureau
9. Utilities	Compiled by Institute for Policy Research
10. Tourism	
National Park Visits	Yellowstone and Grand Teton National Parks
National Monument Visits	Fossil Butte, Devil's Tower & Ft. Laramie National Monuments
Traffic Volume	Compiled by Institute for Policy Research from Wyoming Highway Department Data

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Wyoming Issues

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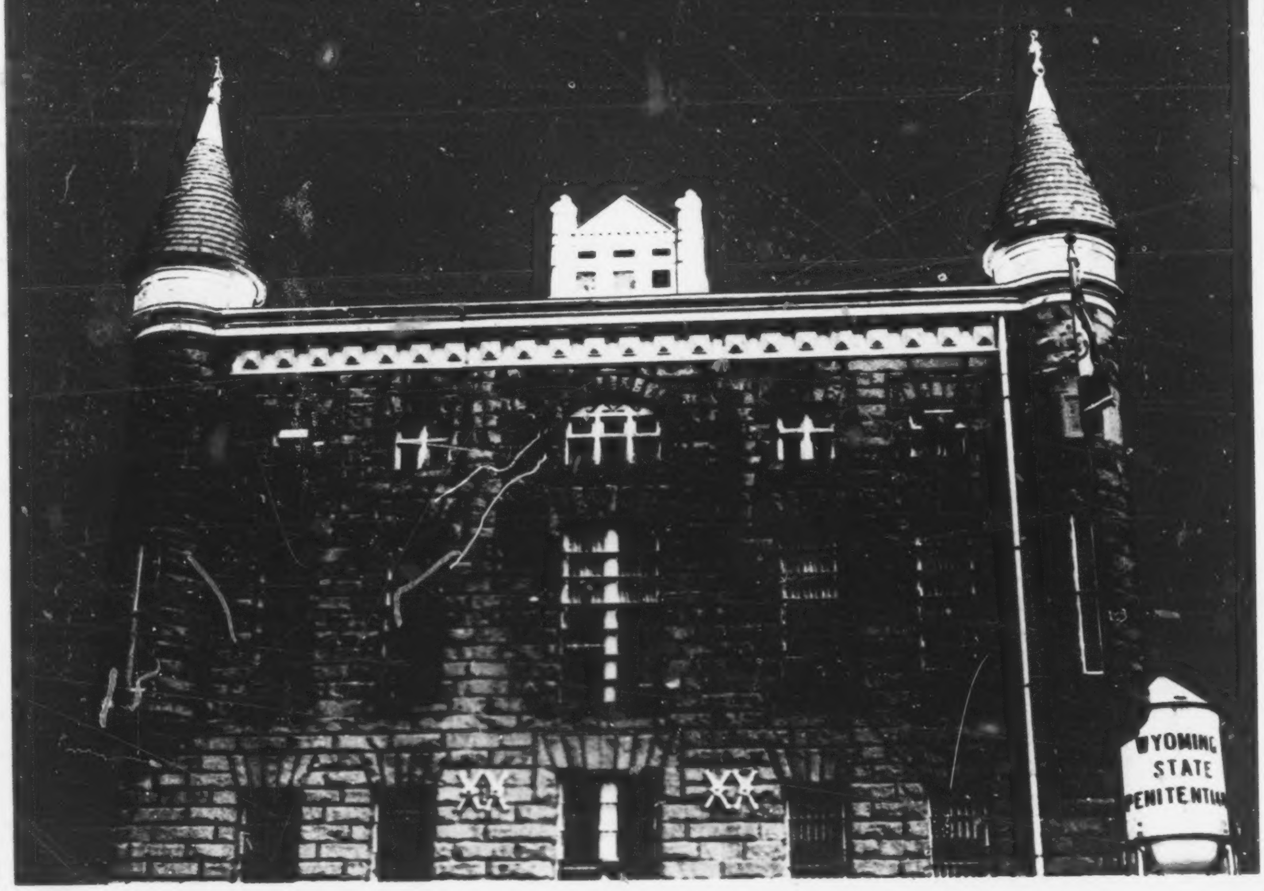
Fall 1981
Vol. 4, No. 4

BEHIND BARS
A LOOK AT LIFE IN PRISON


WYOMING
STATE
PENITENTIA

If this edition of *Wyoming Issues* seems a little light to you, it's because we've made a major change in the magazine. If you will turn to the back, you'll see that the indicators and forecasts are no longer in the magazine. However, if these conomic features are the reason you buy the magazine, don't panic.

All of the indicators, much of the same forecast material, and many new economic data will be printed separately by the Institute for Policy Research. This publication, called *Wyoming Quarterly Update* (WQU), will be mailed to all subscribers of *Wyoming Issues*, either together with the magazine or at approximately the same time. There is no extra charge for WQU. It is part of your subscription to *Wyoming Issues*.

The change was made because we wanted to provide you with more data, without increasing your subscription costs. WQU has its own staff, and, with increased manpower, far more data can be generated — far more than we can afford to print in *Wyoming Issues* at the current subscription rate. WQU can be produced at a lower cost, page for page, than the indicator and forecast sections in *Wyoming Issues*.

Please let me know what you think of this change. Comments solely directed to WQU should be addressed to John Merrifield, who is in charge of the new publication.

Aside from this major change, everything else remains the same. This edition features articles on Wyoming prisons, nurse practitioners, energy conservation, and the new Arena-Auditorium at the University of Wyoming.

The prison article focuses on the men's penitentiary in Rawlins, with a shorter piece on the Women's Center in Evanston. Included are interviews with prisoners and administrators.

Nurse practitioners are a mostly female group of trained medical personnel, who are having a tough time being accepted by the traditional medical profession. The article by Linda Putman explains some of the problems faced by nurse practitioners.

The results of an energy survey, conducted by Mary Ann and Don Anderson, are presented, along with some energy-saving suggestions by John Merrifield.

Also included is an interview with Charles Bradley, and an article about the "house that Bradley built," the Arena-Auditorium, which will house the Cowboy basketball team.

The regular features are included. In "Spotlight," Senator Alan Simpson defends Secretary of the Interior James Watt. "Viewpoint" features U.W. teacher Pat Linenberger, and "Wyoming Books" reviews a book of Shoshone Indian tales. There is also another letter to the editor in this edition, this time about the article on coal slurry pipelines, which was our cover story in the last edition.

Wyoming Issues readers may be interested in a recent award given by the Wyoming State Historical Society. Becky Eddins Woodcox won the L.C. Bishop award, given for extra effort in research on a Wyoming historical site, for her article "The Mormon Trail — 1847 and 1981," which appeared in the Summer 1981 edition of *Wyoming Issues*.

I sincerely hope you like the new structure of the magazine and *Wyoming Quarterly Update*.

Kate Missett

Kate Missett
Managing Editor

Calendar of Events

Oct. 15-20 **Various Communities**	Great Plains Experience Series, number 4. "The Settling of the Plains." 7:30 p.m. each evening. Oct. 15, Ranchester Branch Library. Oct. 19, Catholic Church Parish Hall, Crow Agency, Montana. Oct. 20, Dull Knife College, Lame Deer, Montana.
Oct. 15-17 & 21-24 **Casper**	Play. "Brigadoon." In the Penthouse Theater on the Casper College campus. Curtain time 8 p.m. Tickets $3, available at the Student Center.
Oct. 15-Dec. 13 **Laramie**	Art shows. Oct. 15-25, American Indian Frontier, portraits and colored prints from 1835-1845. Nov. 1-18, National Association of Women Artists exhibit. Nov. 22-Dec. 13, works by graduating UW art students, reception Sunday, Nov. 22, 2-4:30 p.m. At the Art Museum in the Fine Arts Building on the UW campus. Hours, 1:30-5, Sun.-Fri.
Oct. 15-Dec. 31 **Laramie**	Art shows. Oct., seascapes by T. James Miller. Nov., paintings by Don Weist. Dec., watercolors by Sheila Langlois, etchings and drawings by Jim Beasley. At the Folk Studio Gallery, 223 Garfield. Hours, 9:30-5:30, Mon.-Sat.
Oct. 19-Jan. 23 **Laramie**	Art shows. Oct. 19-30, Western paintings and drawings by Jerry Antolic. Oct. 26-Nov. 6, UW design students' projects. Nov. 9-20, UW Range Club photo contest. Nov. 23-Dec. 4, clay and fiber arts. Dec. 7-18, traveling ceramics show. Jan. 11-23, surrealism show. At Gallery 234 in the Wyoming Student Union Building on the UW campus. Hours, 9-4, Mon.-Fri.
Oct. 22-25 & 31-31 **Cheyenne**	Play. "Life with Mother." Laramie County Community College Playhouse. Curtain time 8 p.m., 2 p.m. on the 24th. Tickets $2.
Oct. 23-25 **Sheridan**	Play. "The Children's Hour." Room 1, Sheridan College. Curtain time 8 p.m. Free admission.
Oct. 28 **Sheridan**	Wednesdays Plus. "Reading Your Neighbor." A look at international customs, habits, and body language. 7 p.m. at Sheridan College.
Nov. 2-17 **Various Communities**	Great Plains Experience Series, number 5. "Heirs to No Man's Land." 7:30 p.m. each evening. Nov. 2, Sheridan County Fulmer Library. Nov. 4, Big Horn High School Cafeteria. Nov. 5, Story School. Nov. 9, Methodist Church Center in Buffalo. Nov. 11, Clearmont Community Library. Nov. 12, Ranchester Branch Library. Nov. 16, Catholic Church Parish Hall, Crow Agency, Montana. Nov. 17, Dull Knife College, Lame Deer, Montana.
Nov. 4 & 5 **Sheridan**	Wednesdays Plus. "Population: Issues and Attitudes." 7 p.m. at Sheridan College.
Nov. 6-8 **Sheridan**	Play. "John Brown's Body." Choral version of Stephen Vincent Benet's poem. Curtain time 8 p.m., 2 p.m. on the 8th. At the Sheridan College gymnasium.
Nov. 12-14 & 19-21 **Casper**	Play. "Slow Dance on the Killing Ground." In the Penthouse Theater on the Casper College campus. Curtain time 8 p.m. Tickets $3, available at the Student Center.
Nov. 30-Dec. 15 **Various Communities**	Great Plains Experience Series, number 6. "Four Portraits." 7:30 p.m. each evening. Nov. 30, Sheridan County Fulmer Library. Dec. 2, Big Horn High School Cafeteria. Dec. 3, Story School. Dec. 7, Methodist Church Center in Buffalo. Dec. 9, Clearmont Community Library. Dec. 10, Ranchester Branch Library. Dec. 14, Catholic Church Parish Hall, Crow Agency, Montana. Dec. 15, Dull Knife College, Lame Deer, Montana.

Do you have a pertinent item which you want to place on our Calendar of Events? If so, please send it to *Wyoming Issues*, Box 3925 University of Wyoming, Laramie, Wyoming 82071. Only a few can be used each time, so mail early. To appear in the summer edition, we must have items no later than May 31; for the fall, August 31; winter, November 30; and spring, February 28.

Wyoming

Contents

Problems for Nurse Practitioners May Mean Longer Waits in Doctors' Offices

Nurses resent them, and doctors are dubious, yet nurse practitioners could be a boon to the medical profession.
By Linda Putman . . . . pg. 10

Wyoming Basketball Gets a New Home

Wyoming athletes get a new sports center that has to be seen to be believed.
By Kate Missett . . . . pg. 16

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Issues

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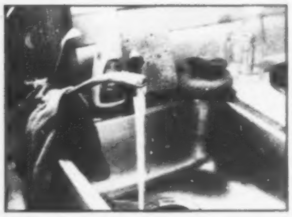
BEHIND BARS
A LOOK AT LIFE IN PRISON

Wyoming just built a new men's penitentiary, and there are plans for a new women's facility in Lusk. But what will these places mean to the men and women inside? What is the reality of being in prison? This article provides a brief glimpse into prison life – brief, because unless one is really inside, it's tough to know what the life is actually like. There are also some revealing thoughts by a long-timer.
by Michael Dean with Kate Missett . . . . pg. 4



Energy

How much energy goes to waste in your home? Have you taken any steps to conserve energy? Some tips and survey results about energy.
By John Merrifield and
Mary Ann and Donald A. Anderson . . . . . pg. 20

Departments

Calendar of Events 1
Letters to the Editor 9
Viewpoint
by Al Simpson 14
Wyoming Books
by Kate Missett 19
Spotlight
by Kate Missett 27

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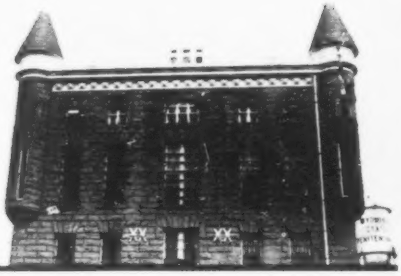


Prison life is something most of us are not familiar with. Below are some opinions and feelings from both convicts and administrators.

by Michael Dean with Kate Missett

He is in the alley, between the vocational education shop and the imposing 19th century stone wall, between downtown and armed tower guards, between his sentencing and his release. He is a trustee, a number among some 12,000 convicts sentenced into Wyoming's penitentiary system since the 42-cell territorial prison in Laramie opened in 1873.

The territorial prison, now the University of Wyoming stock farm, was built with $40,000 in federal revenue monies, split between four states. In 1889, the Wyoming Constitution placed it, as the men's penitentiary, under the direction of the State Board of Charities and Reform. In 1890, the penitentiary was moved to Rawlins, with buildings and facilities built at a cost of $100,000.

In 1975, a successful civil liberties suit, claiming the prison was anything but adequate, forced the state to build a new facility capable of housing 520 convicts. The new facility will cost about $30 million. Located a few miles south of the old penitentiary, the nearly completed new facility housed 133 maximum security prisoners by last August.

In addition to the men's penitentiary, other correctional institutions fall under the jurisdiction of Charities and Reform. The Industrial Institute, for incorrigible boys or boys convicted of crimes, located in Worland, came under the board's supervision in 1910. Wyoming Girls' School in Sheridan was opened in 1925. The Girls' School houses 80 girls, who have been determined delinquents or status offenders (such as runaways or incorrigibles) on an open campus, with dormitory housing.

The State Penitentiary Honor Farm was established in Riverton in 1931, and four years ago, the Wyoming Women's Center at Evanston opened its doors. (See sidebar on the Women's Center).

In the late 1800s, men worked in the stone quarry, cut thousands of tons of ice from the nearby Laramie River, or were farmed out and kept free in exchange for their labor. A once-common practice, that of sending Wyoming prisoners to other states because the rates were lower than in Wyoming, occurs only occasionally today, usually for personal protection of the prisoners.

These two men were the first prisoners allowed to work without supervision at the new penitentiary.

Today, it costs $22 per day to keep a prisoner in the penitentiary at Rawlins. The prisoners are now offered about 14 vocational courses, ranging from metal work, to carpentry, to garment manufacturing. They also have access to high school and college educations.

In May, 1981, the first three Wyoming prisoners graduated from college. Irv, Shorty, and Marty donned caps and gowns, and received Associates of Art degrees. Charlie, handicapped with double leg amputations, will be a journeyman in electronics, having qualified through correspondence courses, when he is released. These men, and a few others like them, are a minority, however. Most convicts do their assigned jobs for the money, not to acquire another skill.

For some, prison is beneficial. Marty, the behavioral science graduate planning on Emergency Medical Training certification, says if it were not for prison, he would be dead from alcoholism. "It's up to the individual," says Security Lieutenant Rick Morgan. "People like Marty reach down someplace and find what they need. Others just stagnate. The men who get an education earn it. It is their time, their money, and their effort."

Warden Duane Shillinger, with the penitentiary for 16 years, says the conditions under which inmates live are deplorable. It forces inmates to learn how to live in a prison, as opposed to the real world. "If they can't deal with prison, they will fold physically — because they can't protect themselves — or mentally — because they can't put up with the strain," Shillinger says.

Prisoners are kept in the same place every day. It makes an interesting social system, according to Shillinger, because it is void of any semblance of the society to which they will return. However, Shillinger feels that the new correctional facility should and will provide a much more productive, stimulating environment in which the inmates can live.

"My responsibility is to return persons

Photos by M. Dean

back to society with less destructive behavior than they had when they came in," notes Shillinger. "It costs the state a huge taxpayer investment. Nobody wants a product that will immediately want to rip off society again."

The warden's stated philosophy is to operate the institution so it will not be an embarrassingly ill-managed institution for the state. "The more inmates in productive programs, the less problems. Idleness causes problems. Inmates are here for a reason, and if a prisoner keeps up activities conducive to what brought him in, he should get fewer privileges.

"The penitentiary, as viewed by the general public, exists to serve the community by punishing and isolating the offender," Shillinger continues. "But, as viewed by the correctional system, the offender is sentenced to the prison *as* punishment, rather than *for* punishment. Further, the correctional system believes that, because the majority of offenders will return to the community within two to four years, something more than mere isolation must be achieved."

Shillinger criticizes the "shoestring" budget, under which the penitentiary must operate. It creates problems in supplying medical needs, he says, and salaries are insufficient for the cost of living in Rawlins. (There is an 80 percent turnover rate of prison employees, which leaves new help without training or expertise to call on.)

Lieutenant Morgan says he is thankful for the new penitentiary building, because the old one is unsafe and overcrowded. "Naturally, further down the line, the new facility will be full, but it has built-in expansion plans."

Prisoners say the new facility will mean tighter security. "It will take time for everybody to adjust," says one. Morgan agrees that the new site will allow more inmate supervision with less staff. It will improve inmate control, and be better for morale on both sides, he feels.

There are some disagreements to Morgan's opinions, however. For instance, although the new gymnasium is nicer than the old one, there are no facilities for outdoor physical activities. "They are going to be taken care of," Morgan notes, "but they weren't budgeted."

Trustees, mopping the cracked, sunken concrete gymnasium floor in the new penitentiary, which flooded during a rain, say the facility, located in a clay soil base, is sinking. They also comment that there is no grass, no yard, and no trees, but say, "We don't have a choice. We're going to have to go (to the new building). That's all there is to it."

The new facility provides larger cells and more showers. Shillinger says the old cells are dark, with no ventilation except through the barred cell doors. The area of each is about 40 square feet. The new cells are about 85 square feet, with window ventilation. The old shower rooms were used by an entire cell block. In the new building, there are showers for every 12 men.

Shorty, one of the convicts who received an Associate of Arts degree, works in the machine shop.

Double fencing and concertina wire surround the new penitentiary.

The new penitentiary is shown here in the final stages of construction.

Morgan says the new building will be cleaner and neater, because it is new. One prisoner, however, complains about moving, because, he says, there will be smog from the coal-fired generator.

Things could be worse, however. The penitentiary here is relatively small, compared to Kentucky's, for instance, which houses 2500 inmates.

There are some problems at the penitentiary. Among these are drug use and homosexuality, and, a problem for the warden, escapes. There is very little violence.

Prisoners mention one convict who was caught in August with 20 LSD tablets and some marijuana. The convict was locked in a cell for a few days, then allowed back on the grounds.

There are accusations from the prisoners, about guards who supplement their $1100-a-month salary by smuggling drugs and facilitating escapes for prisoners who make between 5 and 25 cents an hour. A marijuana cigarette about the size of a wooden match sells for $5, and is somehow smuggled inside. An occasional prisoner finds the right door unlocked at the right time.

After a recent escape, Shillinger says he investigated a guard, because he is convinced the guard was paid to help the prisoner get away. One prisoner, though, says the guards aren't paid off for anything. "They just do favors because they understand." He says smuggling goes on at any prison, but at Rawlins, "it may be at the ridiculous level."

Shillinger is quick to criticize the emphasis placed on the sensational – such as escapes – by the press. He feels more attention should be paid to the convicts who do good works, such as the old convict who donated $870 to the Senior Citizen's Center for a washer and dryer. "It irks me that the guy who is in trouble is idolized in the newspapers, but there is little or no attention paid to old Joe Blow, who gets an education and the benefits available," he declares.

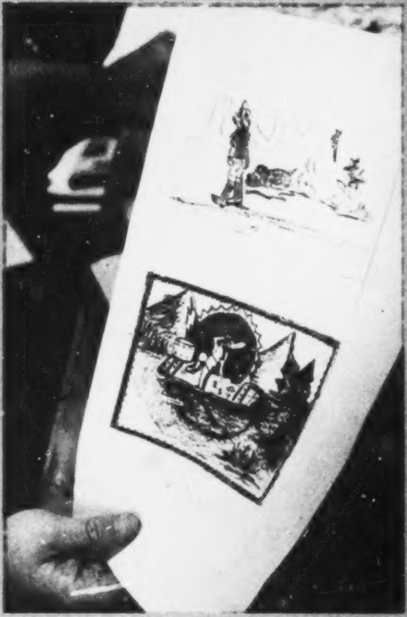
Shillinger figures that penitentiaries will never be immune to escape, because being locked up is against human nature. He says there is a great deal of boredom and monotony inside the prison walls,

Wyoming Women's Center: "Act Like a Lady."

In Evanston, near Wyoming's western and southern boundaries, about 35 women are housed in the Women's Center, a facility temporarily housed on the State Hospital grounds.

The fenced facility has two buildings on less than two acres of land. The buildings are delapidated, but brightly painted, old brick. The main building contains Teton and Sweetwater Halls. Most of the inmates live dormitory-style. There is also a kitchen, a community clothes closet, a beauty parlor, and administrative offices. Partitions are used in the dormitory areas in an attempt to achieve at least semiprivacy. The building also has visiting areas and day rooms.

Twenty yards away, Sheridan Hall houses maximum security prisoners and a few trustees. Like the other building, Sheridan Hall has visiting areas and day rooms, but prisoners' sleeping quarters are in individual rooms, rather than dormitory-style.



These drawings are the work of a woman named Biff, now at the Women's Center in Evanston.

Joni, serving time for forgery, has an aquarium in her room.

Off Sweetwater Hall's main entrance, there is a control room with six monitoring cameras, run by one of the 11 correctional officers on the staff. There is also a game board, with numbered chips – one for each prisoner – to keep track of the inmates.

While no formal vocational programs are available at the Women's Center, the prisoners do have educational opportunities. A college level course was offered to women inmates in 1980. Other courses taught include bookkeeping, English, business, reading, typing, communications, sewing, art, cooking, and consumer education. The courses are taught by teachers from the "outside." Also available are Alcoholics Anonymous and narcotics-users sessions.

"The state has been very supportive," says the slender, auburn-haired warden of the Women's Center, Judith Uphoff. She says the present facility is fine, although it could easily be overcrowded. "Space for people doing time," she says, "is especially essential." The Women's Center will eventually be moved to a 70-acre, multimillion dollar facility outside Lusk. The new facility will be capable of housing up to 80 inmates.

A few services are shared with the State Hospital, including psychological and psychiatric counseling, laboratory work, maintenance crews, and combined purchasing power. "There is no animosity between the hospital and the prison," Uphoff allows, "only different purposes for existence."

Prisoners at the center are supplied with what they need, including cosmetics and clothes, or, if they prefer, they may buy their own necessities out of the money they receive for work done at the center. The highest paying job is that of cook, which pays $60 per month.

Loretta is one of the cooks and a widow by choice. She also works in a beauty parlor, where she gives shampoos for 45 cents each, and permanents for $3.95. A few women work as secretaries for government offices. Hobbies can also bring in a few dollars.

Boredom and monotony shadow the prisoners' spirits. "Once you reach trustee status, there is only time to do," says one inmate.

There are feelings of bitterness towards society's stereotyped images of women prisoners, and towards the judicial system. According to a couple of women, society envisions them as freaks or monsters, and the courts dole out justice in accordance to their monetary worth. One of these women is doing two to four years for a bad check for $30 and a parole violation. The other is serving 20 to 40 years for killing her husband.

Joni is one prisoner at the Women's Center. She was convicted of forgery, after cashing bad checks to support her $500-a-day cocaine habit. Her husband is doing time in Rawlins, and was "busted" in prison for pot possession. Joni says whether or not she goes back to her husband depends on his giving up drugs.

Before she started serving her two to three years in Wyoming, Joni spent four months in Canyon City, Colorado for armed robbery. She also served three months of her time for forgery in the Albany County jail.

"If I ever had to do time again, I would want to do it here," she says, sitting beside her aquarium filled with fish. She says neither the food nor the attitudes were any good at the Albany County jail. Here, she says, "they can help you get your act together. Canyon City has nothing to offer. Canyon had no alcohol or drug counseling, no college schooling, no recreation. I just did time and played cards. It was dead time. I feel that's why I ended up in another institution. If I would have gotten help back there, this may not have happened.

"We are society's rejects, but the women's prison is very open and very mellow. The warden and staff have a lot of respect. The warden and (program coordinator) Ruby Husted have gone to court for women to allow them to retain custody (of their children). If they feel you are going to be a good parent when you get out, (they) will fight having the state take custody of a child, all the way."

(Three women have had children while doing time. Facilities are available for inmates' children to visit, for up to a week at a time. Boys up to 12 years of age, and girls up to 16, may visit. However, conjugal visits are not allowed. Holding hands – in sight – and kissing at arrival and departure of visitors are allowed, but no other feelings may be shown toward the women, according to Loretta, the cook.)

Joni feels that the warden's philosophy is "If you act like a lady, I'll treat you like a lady." The reverse is also true.

Joni says, "This place starts at day one. You start growing up all over again. People tell you what to do, and when, where and how to do it." According to Joni, the independent ones rebel at first, but "the more responsibility one holds, the more freedom one can achieve within the confines of an institution."

and that prisoners will quite naturally try to get away.

During the summer, only 16 attempts or actual escapes were made at the penitentiary, state hospital, and honor farm combined. Shillinger says the favored time for escapes is in the spring, after the prisoners have been cooped up all winter.

Homosexuality concerns both administrators and inmates. There is no socially accepted sexual outlet for the prisoners. The penal system does not condone homosexuality, but there are two men assigned to each cell.

Inmates recall two juveniles (15 and 16 years old) who were locked up in the admitting cell with another convict. They were sexually assaulted by the older man.

The warden says segregation of effeminate males has not been successful. One problem is that most of the prisoners are in the prime of their sexual lives, with an average age of 26 years. Shillinger believes in conjugal visits, because "the prison system fosters some grotesque sexual relationships. Maybe men and women should be allowed back together, to bring some decency to the sexual act," he says.

Violence could also be a problem in the penitentiary, but it is minimal, says Shillinger. The staff and inmates try to keep it that way. A stabbing is big news. "We haven't given the inmates a reason to have to use violence," assures Shillinger. One guard says that a lot of people come through the door with only their hat, their head, and their pride. "We let them keep their hats, and, if they do have some integrity and pride, we let them build it."

One prisoners says prison life is "give and take. For the most part, the guards are pretty decent." But another says the guards are high-handed and condescending.

Operating two facilities with a staff only large enough for one is a problem, says Morgan. "The inmates are caught in the middle. It may not be fair, but that's the way it is."

"You never get straight answers from anybody," says Gary, a prisoner convicted of bodily assault and sentenced to five years.

Because Warden Shillinger would not permit interviews with maximum security prisoners, author Dean corresponded with "The Professor" at Nevada's penitentiary. The Professor is doing two consecutive life terms plus 14 years for first degree murder. The following thoughts, according to The Professor, are representative of the "lifers" in any prison. The language has been cleaned up, and slight corrections in spelling have been made where required.

Shall we speak of violence in prison? There is a nice juicy subject. Readers tend to sweep the shelves clean of this sort of subject matter. Drive by a penitentiary and gaze upon the dark, forbidding walls. Does your mind flash ebon hues laced with red? Murder, rape, extortion! These events take place each and every day inside the walls of some prison someplace. But does that really mean the way of life is indeed one of violence?

First of all, a few facts have to be taken into consideration. One is [that] prison is an independent functioning society, made up of a cream-of-the-crop: antifunctional, antisocial, sociopathic human beings, all placed together and required to exist as best they can. They can, they do, and they will continue to. Why? Because they have to, as do you.

There are norms (laws) in any society. There are also sanctions (punishments). If you break the law, you are punished. Where in any society do these rules not apply? My point can best be explained by an example.

If you walk into a bar and call the fellow down at the other end an S.O.B., then throw in a few derogatory remarks about his mother, he will most likely punch you in the nose. That is, if he is any kind of normal human being at all. Now, if you walk into another bar and see another gentleman sitting down at the other end, and you recognize him as Joe Smith, who has just been released from the nut house for mass murder, would you still call him an S.O.B.? He'd probably kill you if you did. Prison is full of Joe Smiths, so if you mess around, you're going to pay.

One more thing about violence in prison. On the street, if you break the law, you go to prison. In prison, if you break the law, the threat of going to prison is nonexistent.

To be in prison means one is a prisoner. To exist in a prison, one must become a convict and live each day in the reality of his surroundings. No fantasies, no whimsical dreams, real life, day-to-day existence. It's called doing time. It is only boring if you let it be. There is always enough to do.

When a baby is born and a new life is brought into the world, there is usually a tiny article way back on page 32 of your morning paper. What a marvelous thing birth is. Then, page one will say "10 Killed In Plane Crash." Everyone should turn to page 32 and throw page one away.

Inside, doing time works that way. You throw page one away, and read the page 32s in all of the papers. There is not one of these old, hard convicts in this institution who would turn down a chance to hold a puppy in his arms. There is something wrong. We are people inside these walls, and it's not some deep, dark chamber of horrors. We have TV and radio and newspapers and visitors. We ask questions of free people, like "How was your day?" or "What do you think of President Reagan's policy on Social Security?"

That is the sort of thing we talk about amongst ourselves. I am interested in the crisis in the Middle East, aren't you? Are we, then, so very different? I get into discussions every day about something I heard on the news or saw in the paper. We reminisce, compare lifestyles, and play sports. As a whole, we function normally and exceptionally well for a bunch of abnormal outcasts.

"In some cases, it's true you never get a straight answer," says Morgan. "It takes a lot for an inmate to ask a guard for help, as the two are on opposite sides of the fence. The staff often does not think it's important, and sometimes answers take time to come down through the bureaucracy. There are communications problems. It's a typical bureaucracy, taking time, when the inmate wants things done now."

Prisoners don't have much motivation to behave, because there is no time taken off the minimum sentence for good behavior in Wyoming. There is a minimum sentence, which must be served, regardless of behavior, and, afterwards, up to 10 days per month can be taken off the maximum sentence as a reward for good behavior.

Morgan says, "As far as good time (time off for good behavior) goes, Wyoming is 100 years behind everybody else. A man can raise hell for the first four years of a five year sentence, then clean up his act." There is no reward for behaving the first four years.

Other avenues for early release do exist, though, through governor's pardons or commutations from district judges. The state parole board made several recommendations this summer for commutations. According to parole board chairman Tom Gorman, the recommendations were made because the old penitentiary was overcrowded, and because it would make the transfer to the new facility easier. Many of the inmates who received recommendations were within six months of their release date.

In general, the prisoners give the penitentiary at Rawlins relatively high marks. Some are philosophical, some are practical, some are just waiting. As one trustee says, "This is an easy joint. If I have to do time, I would rather do it here than in Canyon City or Santa Fe. As far as time, this is a Boy Scout camp. The only thing you have to put up with is the psychological aspect of being confined to excess." WI

Letters to the Editor

To the editor:

Recently a friend presented me with a copy of *Wyoming Issues* which contained the article "The Case of the People vs. Coal Slurry Pipelines."

After reading the article I was most impressed with the last sentence of the article which states, "Each of us should consider every argument and fact put forth by every pro and con slurry line individual or group in the state, before deciding that coal slurry pipelines are good or bad." This statement is certainly sound, thought provoking advice!

With this in mind, I would like to offer comments with regard to several agruments presented in the text of the article. Some of the arguments are misleading and should be clarified. These are:

1) On page 7 Mr. Stickley states that estimates of the amounts of water (recharge) in the Madison formation range from 150,000 to 400,000 acre feet per year and therefore alludes that the 15,000 to 20,000 acre feet per year ETSI proposes to use will not deplete the aquifer.

The range of recharge (150,000 to 400,000 acre feet) obviously comes from the DEIS. Closer examination of this report will reveal that this recharge is that for the entire Black Hills area and includes the Precambrian Core and the Minnelusa Formation in addition to the Madison Formation. Also no deductions have been made for those portions flowing Northwest, North and East away from the Black Hills and the Niobrara County well field. No deductions have been made for known seeps and springs (currently estimated at 144,000 acre feet per year). No deductions have been made for the known users of the Madison (Wyo. alone is currently estimated at over 25,000 acre feet per year). If all the deductions were properly assessed, it is possible that the ETSI project will 'mine' water from the Madison Formation.

Dr. Perry Rahn (So. Dak. School of Mines) has estimated that the carrying capacity of the Madison Limestone will allow only 8,000 acre feet per year to the Niobrara well field.

The Wyoming State Engineer has issued several reports which state that the total recharge to the Madison of the entire Powder River Basin from the Black Hills area is only 75,000 acre feet per year. Known users have not been deducted from this figure. In addition, that portion of flow which flows away from the Niobrara well field has not been deducted.

From all of the above information, it is apparent that recharge rates are in question and should be closely examined!

2) On page 8 Mr. Stickley states that "there may be a billion acre feet in storage."

By this statement, Mr. Stickley would like us to believe that the Madison Formation is isotropic and homogeneous throughout the Powder River Basin. With this in mind I would like to quote the State Engineer in his report to the 1975 legislature, "It should be pointed out that the volume of groundwater in storage is not a reliable indication of how much and at what rate ground water might be produced." He also states, "Limestone is a dense rock and not normally a good aquifer unless porosity and permeability have been enhanced by solution and fracturing. Seeking a source of large underground water supplies in a limestone reservoir is similar to prospecting for oil and gas and other buried minerals."

From these assessments it is obvious that the large scale storage, talked about by Mr. Stickley, has little (if any) relationship to the planned withdrawal by ETSI.

3) On page 7 it is stated that there is no connection between the upper (shallow well) aquifers and the deeper Madison aquifer.

Since the issuance of *Wyoming Issues*, the final EIS has been released. The EIS states that there *is* communication between the upper aquifers and the Madison. In fact the EIS details numerous charts and maps indicating massive drawdowns in the shallower Inyan Kara formations. This information echos some of the comments made by Dr. Perry Rahn, Dr. Peter Huntoon (Univ. of Wyoming), Don Brown (Brown Geotectnics of Denver) and Woodward and Clyde (San Francisco) and others who have all expressed some concern for the communication of other aquifers with the Madison.

4) On page 8 Mr. Stickley states that the contract enables the third party beneficiaries to enforce the contract themselves, without having to rely on the state engineer or the governor to initiate action.

I question the validity of this statement. Careful examination of article 4 of the agreement (which has been printed on pages 8 and 9) will reveal that the entire matter is at the discretion of the state engineer. In fact, a damaged user must go through a multi-stepped process (read them and count them, there are approximately 11 steps) in order to validate a claim. ETSI has the right to appeal each decision. Even after a decision is finally reached, ETSI then has two more years of allowed pumping.

Letters to the Editor

Another item which makes this article more confusing is the fact that the agreement previously defines 'pumping' as those people who currently pump from the Madison formation. If this interpretation is applied to the first sentence of article 4 then it means that only users who currently pump from the Madison are included in the agreement.

5) On page 8 Mr. Stickley states "that ETSI is willing to review the contract with those who are critical of it, no such review has occurred."

It should be pointed out that ETSI was made aware of many conflicting items, by myself, in front of the 1981 legislature. Since that time the Niobrara County Farm Bureau and the Governor's AD-HOC Committee have both tried to work with ETSI in revising the wording of the third party agreement. Niobrara County Farm Bureau has pointed out many of the deficiencies to ETSI and have yet to receive any new language. Subsequent to Farm Bureau's activities, the Governor's AD-HOC Committee was formed. Niobrara County Farm Bureau has since passed a resolution stating their support of the Governor's AD-HOC Committee. However, at this point, ETSI refuses to work with the AD-HOC Committee.

In summary, I feel that your article was fair to both sides of the issue. Your closing comment, as stated before, is most appropriate and possibly *Wyoming Issues* could do a continuance of the slurry pipeline issue in order to bring more of the pros and cons to the attention of the public.

Sincerely,
Mel ZumBrunnen
Chairman
Save Wyoming Water Inc.

P.S. 200,000 acre feet is enough water to supply every Wyoming citizen with 197 gallons of water per day for an entire year.

Editor — In all fairness, it should be pointed out that I wrote that "no such review (of the Third Party Beneficiary Agreement) has occurred" (see item 5 in Mr. ZumBrunnen's letter).

Tired of waiting for the doctor? Someday, nurse practitioners may be commonly used to speed things up for the doctor and patients. In the meantime . . .

Problems for Nurse Practitioners

Text and photos by Linda Putnam

Inflation and growing disaffection with the existing medical establishment have prompted consumers and many health care workers to demand changes in the quality of their medical care. Holistic health, homeopathy, home births, herbal medicines, and soaring malpractice suits are an enraged call for some kind of response by the medical establishment to their patients.

While many corrective measures are still called for, there has been at least one positive response within the medical community to better serve people in need. This response has been initiated primarily by women, in the form of the nurse practitioner.

The very early beginnings of the nurse practitioner program came from Kentucky, and other Appalachian states, where the needs appeared to be the greatest. In the early 1970s, the University of Colorado initiated the first full educational program. Now, many varied and specialized programs are offered throughout the country to serve the myriad forms of health care needs.

A nurse practitioner is a registered nurse who has been accredited in one of several ways — with an Associate degree from a two-year institution, with a diploma after three years' education in a teaching hospital, or with a Bachelor of Science in Nursing from a four-year college or university.

In addition, a nurse practitioner must complete a certified program, which may vary in length from six months to two years, depending on the specialty. She (and most nurse practitioners are female) has the choice of specialization in family practice, family planning, emergency medicine, rural health care, pediatrics, gerontology, midwifery, and the like.

Nurse practitioners are ambitious about health care they want to provide, and they pay special attention to attitudes and philosophy of medical care. They say their functions are collaborative with physicians, and they view themselves as members of a team of equal partners, each member providing a different service to the patient.

While the physician is concerned with curing the ill, the nurse practitioner often deals more particularly with preventive health care. Diet, nutrition, family problems, stress at the workplace — all elements of well-being are considered when a nurse practitioner cares for her patients.

As with any new field, high aspirations and good intentions do not erase certain transitional problems. One of the most obvious difficulties for nurse practitioners entering the current health care system is the lack of standardization in education and certification. Another is the lack of interest and receptivity by many practicing physicians. Consequently, the existing medical system is only beginning to determine how best to utilize the skills of the nurse practitioner.

Comments of several nurse practitioners based in southeast Wyoming reveal the complexity, difficulty and ambitiousness of the tasks they have undertaken.

Ann White

The Platte Valley Clinic in Saratoga was a year old last June. Dr. John Lunt left his practice as a surgeon in Denver, and fulfilling an old dream, bought a ranch on the western side of the Snowy Range Mountains.

When the townspeople realized they had a new doctor, after four had come and gone, one after the other, they set to work and planned a new clinic. Lunt leased a space in a brand new building, built by a local dentist. The city and county, and many private donors, bought equipment needed for radiology, emergency, and other functions. The city gave land for the building. The entire clinic houses two dentists, a visiting orthodontist from Lander, and optometrist, one physician, one nurse practitioner,

May Mean Longer Waits in Doctors' Offices

Ann White examines a patient, performing nearly the same services as a doctor would perform.

Ann White (right), nurse practitioner in Saratoga, explains a problem to U.W. student nurse practitioner, Betty Dumonceaux.

three RNs, and two student nurses (one a nurse practitioner).

Ann White is in charge of the medical staff. Lunt invited her to move to Saratoga as part of his practice when he left Denver. White was working as a nurse practitioner at Swedish General with one of his colleagues, and Lunt was well acquainted with her abilities. Her specialty is in emergency medicine. She is a graduate of the nurse practitioner program at the University of Iowa.

Except for certain procedures involving minor surgery, White provides about the same kind of care as the physician she works with. All major surgery is referred to hospitals.

"I see most of the cardiology, most of the pediatrics, and we share the emergencies, depending on what they are," she says.

The Platte Valley Clinic sees an average of 40 patients a day, but in the summer the figure rises to 50 or 60. Lunt and White have seen as many as 100 patients in a day — patients from drilling crews, forestry crews, tourists, and campers.

"This is a very comfortable situation," White says. I enjoy it very much. John's a great person to work with. He's very knowledgeable, and easy to get along with. It's not easy to find partners like that, believe me!

"I think the practice John and I have is ideal. Saratoga went through four doctors before we came. Each one burned out because he was isolated and on duty 24 hours a day. That's what they really call it — burnout. They just can't take the stress. If you can't get away, like John can to his ranch, you end up leaving. You just can't take it.

"A nurse practitioner and a physician can spell each other. Neither of us gets truly burned out. John can go to Mexico for a week, and I hold down the fort."

Lunt is equally happy about his nurse practitioner. "Doctors who view nurse practitioners with scepticism just don't have Ann White. They have a well-founded concern, perhaps not a correct one, that a nurse practitioner will do more than she is trained for. It's a possibility. But there are not that many cases where this is a problem."

Most nurse practitioners work with a physician, like White, or in an institution, such as a clinic. Lunt claims a nurse practitioner can be used in any number of ways to expand the role of the physician. "In my case, she doubles it," he adds.

White continues, "This is the ideal situation for a nurse practitioner. It would be tough to go out to Big Piney and be the only medical personnel out there. The same thing would happen — burnout — in a year."

Ruefully, White adds, "The trouble is, that's why all the nurse practitioners are going back to the city instead of out to the rural areas where they are needed."

Leslie Dougan

"Getting into a physician's office, getting past the front office girls, is the most frustrating thing I've ever had to face," says nurse practitioner Leslie Dougan. "A lot of them are nurses themselves. They are RNs who feel threatened. To get your resumé on a doctor's desk is a major accomplishment." Although Dougan has succeeded that far, the physicians are not interested in utilizing her skills.

Dougan is a registered nurse from a diploma program of three years at

Massachusetts General in Boston. She has completed a one-year program as a nurse practitioner, specializing in family practice, at the University of Colorado.

"I chose the University of Colorado (in 1979-80) because I thought it would satisfy my needs for practice in rural Wyoming." Dougan's preceptor during her studies was a family practitioner and pediatrician in Jackson.

After she completed her training in Jackson, Dougan was offered work at low pay in Big Piney. She decided she couldn't live there. Professional isolation and poor salary were the reasons, although she admits a nurse practitioner would be welcome and appreciated in Big Piney.

Since then, Dougan hasn't been able to find work as a nurse practitioner in the Laramie area, where she now lives. She is working right now at Ivinson Memorial Hospital in Laramie, as an emergency room nurse. Her husband is a student at the University.

"I want to find a position that will pay me a decent wage. I'm worth it, and I'm going to be paid for it. That's a terrible thing to say," she laughs, "but that is going to be one of my priorities.

"They never told us how difficult it is to make your way into a health care system. But we can offer so much. We are economical. A nurse practitioner can save a doctor a lot of time. We can do all the health care screening, family health histories, brief physical exams, and we are invaluable when it come to education.

"Most new mothers don't know all there is to care for a child such simple things as how to handle a temperature, a stuffy nose, a cough. We can reassure them. The pediatrician is freed up to do what he is trained for, diagnostic work.

"The problem is, most physicians aren't particularly concerned about helping the patient to help him or herself. Nurse practitioners, that is, *women*, know how to listen. We can make the team a winning combination."

Jeri Bigbee

The School of Nursing at the University of Wyoming instituted a nurse practitioner program only a year ago. Operating solely on state funds, the program was eagerly adopted by the state legislature, in the hopes that rural areas might benefit.

Leslie Dougan, now working as an emergency room nurse, expresses her frustration over trying to find a position as a nurse practitioner.

Jeri Bigbee is in charge of U.W.'s nurse practitioner program.

The nurse practitioner program takes two years, and awards a Master of Nursing when completed. Four students are currently enrolled, and the projections are for four to six new students each year. The emphasis, or specialty, is on family practice, especially for rural communities.

Jeri Bigbee heads the new program. She is a registered nurse and nurse practitioner who completed her education at the University of Washington with a master's degree in nursing.

While Bigbee is eager to make the NP program in Wyoming a success, she notes the political problems that are contributing to a shortage of nurses in general.

"We are aware that we often alienate those we have to work with by asking for acceptance on our terms. We walk a very fine line between promoting our own self-interest and possibly compromising our work in the health care system. But large numbers of nurses are dropping out because of low pay, low status, long working hours, and lack of support. Nursing enrollments are lower, and the University of Wyoming School of Nursing is no exception. Many women are looking around at other options right now."

The median salary for RNs is $13,000. The nurse practitioner, when she can find work, will earn $15-16,000. "People don't go into it to make a lot of money. Part of it is that nurses are acculturated to accepting lesser salaries, simply because they are women" explains Bigbee.

Nancy Kienapfel

Nancy Kienapfel is a nurse practitioner at the Albany County Family Planning Clinic in Laramie.

She dislikes working hospitals, because of their bureaucracy, politics, and difficult relations between physicians and nurses. "And I don't really like dealing with very sick people. My interests are health teaching, health promotion, and wellness."

Kienapfel would like to set up a private practice, something that many physicians find suspicious. It would be difficult to set up a practice in Laramie, she admits. But she has no intention of promoting herself as a physician.

A degree in guidance and counseling, something she has been working on since the time when she couldn't find work, will increase her skills as a nurse practitioner, she believes. Her practice, ideally, would promote staying healthy, with such things as exercise, stress reduction, weight loss, nutrition, and environmental effects on the body.

"I am especially interested in women, which is why I have been at Family Planning for so long. Women's issues education about their bodies, abortion and freedom of choice, and equal pay for equal work are important to me.

"It's really obvious that a male with my training, or the kind of training I have, would be paid considerably more than I

Laramie physician Bob Shine, and nurse practitioners Nancy Kienapfel and Sandy Haley pause for a moment in the Albany County Family Planning office.

receive. I don't know how to fight that."

Most NPs are sensitive about the pay scale of physician's assistants, or PAs, who are less educated, better paid, and generally male. The PA also has had less difficulty finding a niche in the existing system of health care delivery. The PA is trained by physicians, and works closely with them, often in crisis cases of severe trauma, such as emergency medicine.

Kienapfel acknowledges a further obstacle to setting up her own practice. She is reluctant to follow her husband to some states as he scouts out job opportunities in his field. In many areas, a nurse practitioner has more constraints about prescribing medicine. In Wyoming, she may do so under protocols outlined by a physician.

"Pharmacy, nursing, and medical boards need to get together and standardize procedures and requirements about nurses' prescribing medicine. It is done all the time anyway, in physicians' offices," according to Kienapfel.

Considering the bulk of difficulties facing nurse practitioners and limiting their goals, she adds, "Nurses must stick together. Nurses need to support nurse practitioners. Otherwise, professions that stick together, like the PAs, will wipe us out. I heard about an institution in Nebraska that canned all the NPs and put in PAs.

"Nurses want to be helpers, not junior doctors. We want to listen to our patients.

"We are not union-oriented. But we do need to be organized for our own good. Yet, a lot of the tactics used by union organizations are philosophically opposed by nurses. We can't neglect our patients when a strike is called."

Kienapfel continues, "We have to realize that in order for us to give good quality care to our clients, we have to be satisfied with our working conditions. And that means more money.

"Nurses no longer are the handmaidens to physicians. They have their own area of expertise. Some of it overlaps, as with the nurse practitioner, but there are still two separate bodies of knowledge. This is recognized better by nurses than it is by physicians.

"I like counseling my women patients, educating them about their bodies, discussing their sexuality, things they would feel very uncomfortable discussing with a physician. I think it is very important for them."

Mary Kennedy

Mary Kennedy teaches the Health Occupation and Nurses Aide program at Laramie Senior High School, a part-time job. She received her nurse practitioner certification in 1973 at the prestigious Peter Bent Brigham Hospital in Boston.

After several moves with her family throughout the New England and Pennsylvania areas, Kennedy has decided not to look for work as a nurse practitioner for awhile. Family and the possibility of another move, taking her away from the patients she always cares so much about, have made her choose to put aside her training as a nurse practitioner for the time being.

As Kennedy puts it, as an "older nurse" of 52, she has had a number of years to survey the working conditions of the nurse practitioner, and she is sympathetic with what the younger NPs are going through. And, like most, she is sensitive about her functions.

"I'm not sure this doesn't get down to male/female roles. Nurses take so much more time to find out a patient's personal background alcoholism, depression, unemployment. Tranquilizers prescribed by a physician won't fix things up.

"I have no doubt that the nurse practitioner can fill a void. But the physicians I worked for, we have to have 100 percent agreement on medical-nursing philosophy. I would not work for them otherwise. If they were pill pushers, it wouldn't work. We'd be at loggerheads."

Looking back, Kennedy muses at why she decided to go for a certificate as a nurse practitioner. "I have leadership ability. I was head nurse here, a supervisor there. I was often in a position of authority. I guess I was heading for it all along, because I'm good at it."

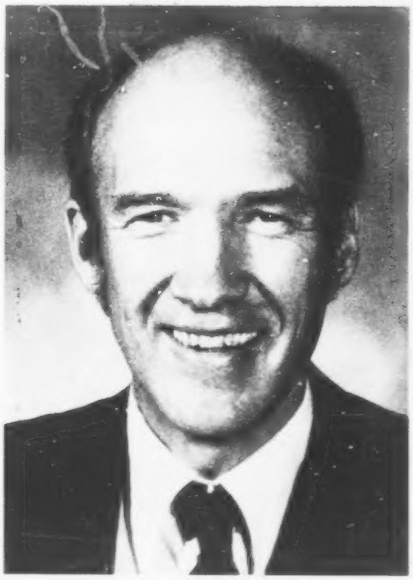
• • • •

Nurse practitioners have a vision of how they can fit into the medical system as a team, physicians and nurse practitioners together, (even if the physician is not in sight, but nearby) functioning together in harmony.

However, until the needs of nurse practitioners are met everywhere, it is unlikely that the needs of Wyoming's people will be met. Isolation, low pay, long hours, burnout, and a shortage of esteem for our practitioners will limit the success of any university program. We can educate our nurse practitioners, but it appears we are not yet ready to place them in jobs to their satisfaction. Directing our attention to that end is something yet to consider. WI

VIEWPOINT

by Senator Alan K. Simpson



Senator Alan Simpson
Photo courtesy of Senator Simpson's office.

Many of those who originally proclaimed Jim Watt as "the great pillager of American lands," will come in time to see a Secretary of the Interior who is a reasonable and responsive man. He has recently been making himself available for thorough interviewing and discussion in the editorial board rooms of the nation's news media and that can only be helpful. He continues to be subjected as all of us in politics are subjected to the shrieks and cries of special interest extremists who still view him as one who is hell-bent on the destruction of our national resources. These wails are often from the same people who would have us slap a padlock on all federal lands in America and shut off all development completely.

A most extraordinary bit of misinformation is continually fanned into a towering blaze here in Washington. It is alleged that Jim Watt is interested in leasing the National Parks for oil and gas and mining development. Watt's detractors love to get all the mileage possible out of that one and, of course, it just ain't so. Jim is always incredulous when this is presented because he had never made that statement and furthermore he could not do so even if he wished since the laws of the United States prevent it and there aren't five members of the United States Senate who would ever vote for that concept. This one wouldn't!

Let's just take a moment to look realistically at the development that Jim Watt is talking about in relation to the West.

I think it's high time for resource development and conservation issues to be considered in some form of common sense and rational atmosphere. The new Secretary of the Interior has an intention to inventory lands with potential rich resources with a sincere and clearly stated desire to carefully balance economic and environmental goals. Jim Watt believes just as I do that we can have careful development of critical and strategic minerals on certain federal lands while still protecting the fragile and authentic beauty of those lands.

It is just good sense to realize that orderly development of natural resources in areas not designated as "wilderness" will assist us in averting the sort of "crisis mentality" development that has been so catastrophic to certain public and private lands and to our national economy in the past.

Regardless of what you might see in the cartoons, Jim Watt's idea of communing with nature is not by having a picnic in an open pit coal mine! The West Wyoming in particular is his native land and he favors allowing the states themselves to determine the standards for reclamation of mined land. It is his feeling that the states should have the right to determine the use of reclaimed land as to whether it should be available for municipal use as opposed to a park development.

You might recall that during my primary campaign for the United States Senate that I was branded as a "100 percent environmentalist." I never denied that I just set out my record as a legislator. During those 13 years as a member of the Wyoming Legislature I was deeply involved in assisting in placing on the statute books the laws that now determine our state air quality, water quality, land use planning at the local level, plant siting, community development authority legislation and mined land reclamation laws. During those legislative debates we dealt with the concept of "multiple use" of federal and state lands. Jim Watt must carry out the exact language of the statutes of the United States where it describes the stewardship of national lands in the context of "multiple use." That isn't some phrase he suddenly made up. He intends to carry out that statutory concept in continued full cooperation with the various states of the nation.

Jim Watt has a deep love of the land that nurtured, sustained and shaped him. He believes deeply in the stewardship and conservation and protection of the environment. The West is his own personal backyard and I'm counting on him to deal with it prudently, compassionately and realistically.

His belief in the responsible stewardship of public lands is demonstrated by his great concern for our nation's park system. He fully recognizes the need to protect "the crown jewels" of that system (Yellowstone National Park, Yosemite, Grand Teton, Glacier and the others). However, the recent acquisition of so many public lands and especially in areas where state or municipal governments could likely reserve those areas has overextended this country's ability to properly care for our parks.

Sensibly then, Jim Watt has placed a moratorium on the acquisition of new park lands. Those funds that were intended for the purchase of new and often-times marginal "public park lands" will be used instead to properly restore and carefully maintain the present park system. The Secretary has stated that our national parks are in a "shameful condition." He is correct. I intend to join him in support of improving and restoring our present parks before we acquire more than we can properly care for by proceeding with the ambitious and ill-considered acquisition of more land. "Greed" is not an unknown human trait to environmentalists any more than it is to developers.

The special interest extremists will always have their say and rightfully so but my hunch is that they will *never* come to appreciate the very special abilities that Jim Watt brings to the Department of the Interior.

But I do deeply believe that rational Americans will come to perceive a very real sense of respect and admiration for Jim Watt. He brings some rare skills to a damn tough job. He is a man of the West and for the West and he has this nation's best interests at heart. WI

WYOMING BASKETBALL

If you thought the old War Memorial Fieldhouse on the U.W. campus was outdated, you'll like the new Arena-Auditorium.

Last spring, the citizens of Laramie began to think the University of Wyoming was having a close encounter of the third kind. On the north side of campus, close to War Memorial Fieldhouse, a huge yellow dome could be seen. Gradually, the dome turned black, and then white.

The scene, seemingly straight out of a science fiction movie, was actually the construction of the Arena-Auditorium, the new special events center at U.W.

The Arena-Auditorium, which will house Cowboy basketball, volleyball, concerts, the university commencement, speakers, and other special events, was brought into being in late 1979. Planning for the huge complex began in 1977, with funds appropriated by the state legislature in 1979. It is slated for completion on December 13, 1981, with the dedication planned for the 19th-21st of February 1982.

Before the dedication, the university may have several dress rehearsals, using a practice basketball game and a practice concert, to give everyone who will be working there a chance to get used to all the equipment. According to Morris Jones, the university planner, the Arena-Auditorium is going to have a lot of sophisticated, versatile sound and lighting equipment, not the kind ordinarily used for sporting events, but capable of reproducing and lighting symphony and theater performances. Jones says, "All the advice that we've received from other schools is 'Don't try to plan something too early and fall on your face. Take some time, get people hired who are going to operate the sound systems and the lights, and have some kind of practice events, just to get everything in tune and set up and let everyone know how to use it.'"

Prior to the dedication, it is likely there will also be an open house, "so people can walk through it and see it," says Jones, "and maybe even see some of the areas that normally wouldn't be open to the public."

The Arena-Auditorium, during early stages of construction.

Even unfinished, the arena is impressive, but it must be seen to be believed. The arena projects an optical illusion. Seen from a couple of miles away, it appears huge, but when one is right by it, it doesn't seem so imposing. However, once inside, it is huge, much bigger than imagined from any outside vantage point. In fact, Jones points out that White Hall, a 12-story U.W. dormitory, could fit inside between the arena floor and the inside top of the dome.

The legislature authorized a total expenditure of nearly $15.7 million for the arena, but the contract amount, although it has changed a little, originally came in for $12.5 million.

Besides being an exceptional facility for athletes, the arena will boast of a lot of conveniences and comforts for the spectators. Except for the press and pep-band sections, and special wheelchair sections, the seats (all 15,004 of them) will be individual arm-chair type seats. The seats are molded plastic, and quite comfortable. They also have special quiet springs, so that the noise won't be overwhelming when everyone stands during an exciting moment.

Jones indicates, "A round building probably costs a little more to build initially, but the seating is so much better. The sight lines are so good in a round building. Everybody's looking right at the middle of the court. There won't be a bad seat in that house.

"I suppose, from the spectators' point of view, the big, wide concourse that goes around the building will be nice. It won't be crowded like the (War Memorial) fieldhouse. There will be restrooms and concession stands in each quadrant. It will have quite a number of ticket booths, security rooms and first aid rooms. There are proportionately a lot more exits than in any other building we've found the building ought to empty in a hurry."

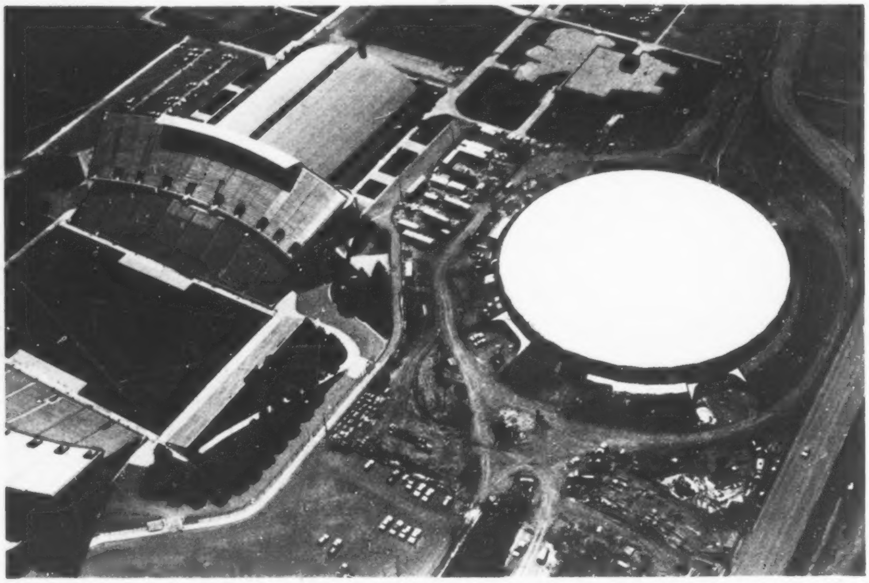
There are two nice features connected with tickets. The first is a ticket office off Willett Drive, with short-term parking. Also, at each of the four main entrances, there are separate doors for those holding tickets and those who have yet to buy tickets. That way, those who have tickets won't have to wait in line for admittance.

There is also a "walking" entrance, for those going to the arena from the dormitories or fraternity and sorority houses. There will be a walk right up to this

Photos courtesy of U.W. Photo Service.

GETS A NEW HOME

by Kate Missett



An aerial view of the Arena-Auditorium. At left is War Memorial Fieldhouse and the football stadium. Willett Drive is the street on the right.

southwest entrance, enabling students to get to the arena without crossing busy streets. And the entrances themselves look like "welcoming arms," in Jones' opinion.

The War Memorial Fieldhouse, which previously housed basketball games and rodeos, will be used for intramural events. A permanent floor, with a smooth finish like a basketball court, is planned. Any number of basketball, volleyball and tennis courts could be lined out. Also, an astroturf "carpet" is planned, so field-type sports, such as football, baseball and field hockey can be played inside. Jones stresses, "This is not for crowds. I'm talking about practice, intramurals and physical education classes."

(Rodeos will be held in the planned-for Animal Science Laboratory, just adjacent to the Arena-Auditorium on the north side of Willett Drive. If it is not built on schedule, dirt can be trucked in on top of the floor in the fieldhouse – a common practice in large arenas and coliseums.)

There will also be a connecting building between the fieldhouse and the arena. The women's locker rooms will be there. For the present, these locker rooms will temporarily be in the arena. After the women get permanent locker rooms, the temporary area will become a "green room" for featured speakers and entertainers. It already sports a spiral staircase up to the main floor in anticipation of its transformation.

The dedication for the auditorium will feature a popular show or concert on the first night. Then, on February 20th, the Cowboys will play the Air Force Academy. Tentative plans include inviting the entire Air Force Cadet Wing to attend. Then, on the 21st, there is an opera singer tentatively scheduled.

Jones says, "Part of the reason for those dates is that the legislature will be in session, and, of course, all the legislators have been involved in the planning and funding of this. They'll all be in Cheyenne at that time anyway, so we can bus all of the legislators and the elected officials of the state over, and have them here for the dedication ceremony."

The arena, the third largest building under construction on campus (in dollar terms), has been well-planned. Numerous arenas all over the U.S. were studied, and any problems in these arenas were eliminated in the plans. According to Jones, "If we've made any mistakes, at least they'll be original mistakes."

Because the new arena at the University of Wyoming has frequently been referred to as "The House That Bradley Built," **Wyoming Issues** *recently interviewed Charles Bradley. Bradley, the last pick (by the Boston Celtics) in the first round of the NBA draft last spring, graduated from U.W. last summer.*

WI: How do you feel about the arena being called "The House That Bradley Build"?

CB: Well, it's a great personal compliment, but one person cannot make that kind of establishment. It all started back when Wyoming got on the right track of possessive basketball. The main factor, as far as representation in the arena, is the fans themselves. The fans come out and scream and they give the chief incentive to play hard and to win the game. So the arena is everybody's "house" – one person cannot take the credit.

WI: What do you think about the person who climbed up on the arena and painted "Congratulations, Charles Bradley" on the roof?

CB: It really made me feel good inside to know that people here in Wyoming care about Charles Bradley, but it was a dangerous thing to do. In some ways, I wish he hadn't done that, because if anything would have happened, it would have been my fault.

WI: How did you feel leaving the War Memorial Field House?

CB: It made me feel sad, but it's time for Wyoming to move on to bigger and better things. We are a major university, we are Division I, we do classify with the Notre Dames, the North Carolinas. When you are in that kind of class, you have to have a classy organization to qualify with the others. Many people don't understand what basketball did for the University of Wyoming. It put our foot in the doorway. It put the university in a new status, the same as other big name schools. Now we'll have to build more dormitories and more classrooms, because everbody will want to be a part of the University of Wyoming. It's a good school, it has good academics, good sports, and lots of cultural events.

WI: What is the arena going to provide for the athletes and for the fans?

CB: For the athlete, it will provide a quality place. When you have a nice place to play, and you are really proud of that place, you perform very well. This makes you feel very relaxed. The arena will make it easier to recruit because that facility can be used for track, volleyball, concerts, conventions, basketball games, etc. Although many people feel that it is a basketball arena, it is not a basketball arena — it is a special events center for anything that is special for the University of Wyoming. It makes a person feel proud, because Wyoming is finally moving to bigger and better things. The public is entitled to anything here at the University, because the university is here because of the people of Wyoming. The arena is supposed to be a first class organization. It's going to have very nice locker rooms, and the old locker rooms in the fieldhouse are going to be converted to extend the training room, they will have a small training room in the Special Events center, for the basketball players, and the big one will be for the football players. That way, we wouldn't conflict, we couldn't get crowded. I think that it will be very nice. I really look forward to seeing it.

WI: What did you study in school?

CB: I majored in Elementary Education. Elementary Education's area of concentration is early childhood. The reason why I picked the young kids over the older kids is that you can talk to younger kids. I am like an idol to many young kids as a basketball star. We have so much respect from children of that age group. It is easiest to teach them because I am their hero, and they are going to do whatever the hero does. Now, if I teach them that it's right to go to class, it's right to do your homework, it's right to learn, then in your spare time, go out and play sports, they will have so much of an advantage. I had a fifth grade class. At that age 11 and 12 — their minds are open. And whatever you say is going to be right. There is no wrong answer in the eyes of a child. Give the younger children a chance, and they're going to grow up right and have an opportunity to explore different things.

Former U.W. basketball star Charles Bradley makes two very aggressive points.

I think that I am a quality student because I went to the University of Wyoming. I've done it in four years, plus play four years of basketball. People think that is an easy task, [but] I would like them to try it. There are athletes that don't really give a hoot. They come to class, they go to school [but] all they care about is football, basketball or baseball, they don't care about class or anything. I'm not fortunate enough to have that. Our family doesn't have that kind of money, and if it wasn't for the basketball scholarship, I wouldn't have gone to college, no doubt. So you have to use it wisely, and I tried to use it as wisely as I can.

WI: Do you think you will ever teach?

CB: No doubt. In professional basketball, the average is three to four years, although I hope I can get eight to nine years out of it. After that, I hope to teach. I really look forward to teaching — I enjoyed my student teaching.

WI: Where did you student teach?

CB: Right out here at Linford (in Laramie). I had a fifth grade class, and my supervising teacher was great. She didn't sit there and teach me how to teach a class, because that's a hard thing to do. She let me learn for myself. Self experience is the best experience.

WI: Are you going to come back to Laramie?

CB: I hope so. I hope to get a chance to come back and see the arena. I think that it is going to be a really pretty place, and I think it is going to be something that Wyoming can be really proud of. **WI**

Wyoming Books

PACHEE GOYO

History of Legends from the Shoshone.

Told by Rupert Weeks
Jelm Mountain Press. $6.00

In this slim (110 pages) volume, Rupert Weeks has written down seven Shoshone tales concerning Pachee Goyo, a 15 year-old boy who is in a hurry to grow up. Each tale provides a moral, although sometimes the moral is very subtle.

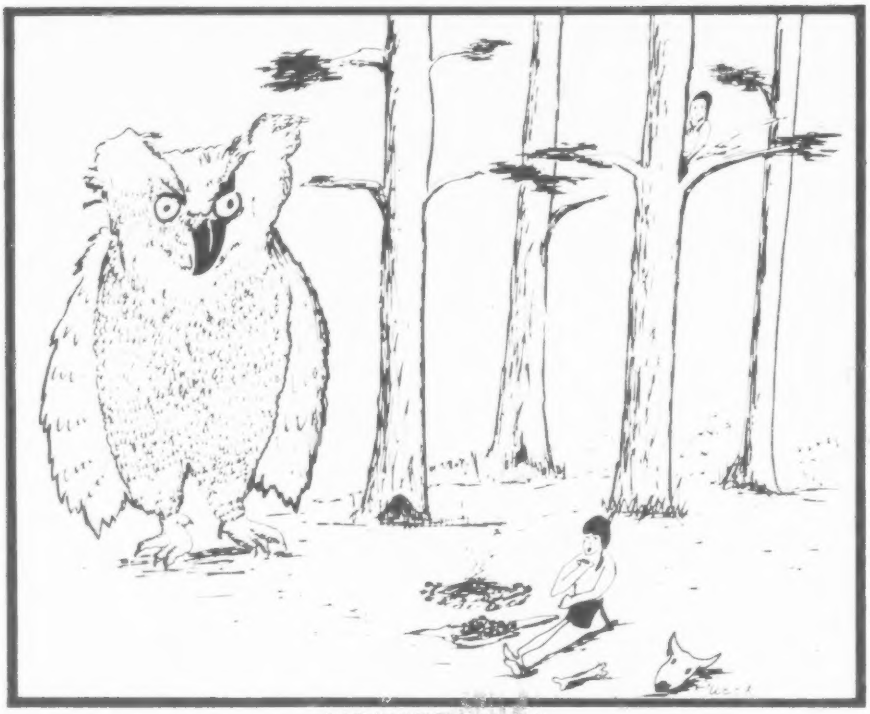
Pachee Goyo (the Bald One) and his brother live with their grandfather, away from the rest of the tribe. Their parents were killed in a battle with another tribe.

At the beginning of the book, Pachee Goyo is being a pest. He wants to kill buffalo. He wants to receive his "medicine" – the particular fetish each Shoshone has to assist him. He won't shut up. Finally, in order to quiet and calm him, his grandfather tells him the story of E Zhupa, the foolish coyote, who was also impatient and always wanted to have his own way. E Zhupa keeps getting into trouble, however, and the reader presumes the coyote learns to contain his impatience.

Once Pachee Goyo has absorbed the wisdom of this tale, his grandfather tells him how to get his medicine – but adds that only he, the grandfather can show Pachee Goyo the right spot where Pachee Goyo must go to receive it. Thus, Pachee Goyo is set up to practice patience.

At one point in the book, the three visit with the Shoshone tribe. There is a celebration, welcoming them back to the tribe, the first night.

Part of the celebration takes the form of story-telling. The stories are funny, but they have morals, too. One of the stories is about a beautiful Shoshone princess, who won't give the braves the time of day. At a dance one night, the bolder braves ask her to dance with them, but she haughtily turns each down. Then, at the edge of the firelight, a brave in a white buffalo robe appears. He seems quite handsome. The brave asks the princess to dance, and, since he is handsome enough for her impossible standards, she accepts. After a few moments of dancing, however, the "brave" turns into a stinking, steaming mass of animal entrails. The princess is horrified, and later dies an old maid.



MONSTER OWL

This little book is chock-full of allegorical tales like these. The stories are used as a teaching device by the Shoshones, and we should be grateful to Weeks for setting them down. Any parents (no matter what ethnic background) can appreciate the situation when Pachee Goyo says, "Why can't I get my own medicine? Also I want a bow and arrow! When am I going to get these things? . . . One of these days I am going away, far away, and then you will be sorry! I will kill a whale single-handed. Just you wait and see!"

The only criticism which could be given about this book is very mild. The publishers have included a foreword, an introduction, and a section called "About the Author." These sections, while correct and helpful, are just a little longwinded. The book could easily stand by itself, with the briefest of notes about Mr. Weeks and an equally brief explanation of the background of Pachee Goyo.

The book is amusing and enlightening. Parents of impatient children, as well as students of Indian culture, will enjoy *Pachee Goyo*.

–Kate Missett WI

ENERGY

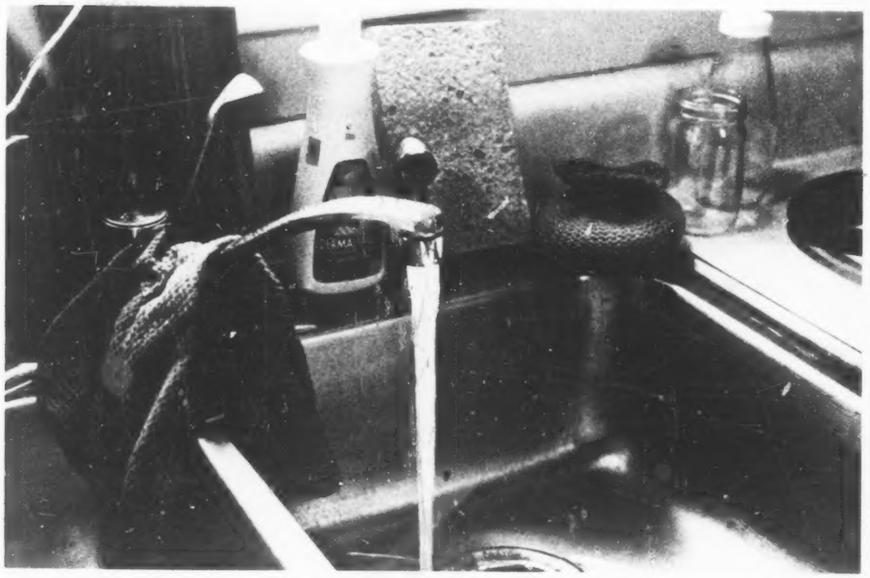
Some Simple

by John Merrifield

Turn off the lights; in the silence of your darkened home you can hear a thousand rivers whispering their thanks.

—Clear Creek

As prices increase and other costs of waste become more directly apparent to us, more and more people are realizing the critical role of conservation in maintaining and improving the quality of our lives. Conservation, or maximizing the productivity of our resources, comes about in two ways: technological progress and a heightened individual and collective awareness of resource problems and mitigation measures. The latter is discussed here. In order to make the discussion more manageable, it will be limited to water and energy conservation. Actually, that limitation is not severe as it might at first appear to be. Nearly every consumptive activity has at least an indirect impact on water or energy supplies, and usually on both.



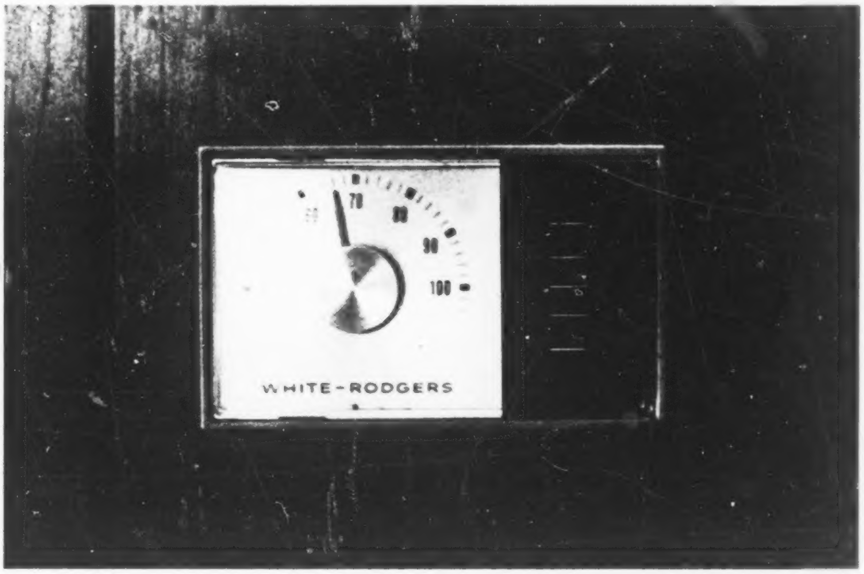
Turn off the water . . .

The first important point to consider is the manner in which we consume energy and water. Both are used up as a consequence of our attainment of some service. They provide a *means* to some end, such as transportation, heating, cooling, cleanliness, and so on. Each time we desire some service, we must ask our-

K. Missett photos.

selves if there is a better, more resource-efficient means to get it than we are used to. A heightened level of awareness of the importance and potential of conservation means a willingness to constantly ask that question of ourselves, and act on that answer.

The value of conservation to you, Wyoming, and the nation is much greater than the money you will save by practicing it. While saving money is very important, and by far the most effective conservation incentive, there are numerous other reasons why we should practice it. Energy and water supplies are often heavily subsidized by payments not closely linked to the use of those supplies. As a result, more is consumed than would otherwise be the case. A classic, close-to-home example of that for many of us is the energy and water provided to us where we work. Since we are not charged (directly) for their use while at work, we have no economic incentive to conserve them. Still, it is not hard to see that we do pay indirectly. If our employer spent less for energy and water, there would be more money available for other things, including pay raises.



. . . and turn down the heat.

Land use conflicts, future supply considerations, and environmental impacts are other good reasons to practice conservation. Inefficient water and energy use may prompt the construction of a water project that floods your favorite hunting area, or dries up your favorite fishing stream. The way we use energy today determines its price and availability tomorrow, just as surely as past waste is partly responsible for its high price today. While progress is being made in incorporating some environmental costs in the cost of production, and thus in the price of the product to the buyer, it is unlikely that our economic system will ever perfectly reflect the costs of some environmental alterations. What's a good price for a scenic vista lost to the smokestacks of a power plant, or a wilderness lost to a new water project? Every gallon of water and barrel of oil we save reduces the pressure to undertake the types of projects which degrade our environment, and which, at least temporarily, preclude some other use of the land or water.

A failure to conserve as much as possible may even exact from some of us the ultimate penalty. Our government appears to be ready to defend, with military force if necessary, our continued access to expensive Mideast oil supplies. If most conclusions about the results of our energy wasting ways approximate the truth, we could find ourselves in the tragic position of having to fight in a war to protect our right to waste energy. Surely reducing the probability that such an event will occur is worth the relatively little extra thought and effort that is being asked of each of us.

With that heightened level of awareness, we can each conserve a lot, most of the time at little or no cost or loss of convenience. In fact, we will save money, both directly and indirectly, in most cases. Let's move to some concrete examples of waste and ways to conserve, and we'll see exactly what each of us should or should not be doing.

According to Miller (1975), the average American consumes approximately 160 gallons of water per day in direct personal use alone. Because water must be treated and transported before and after use, reducing water consumption will also save energy. Some components of the 160 gallons per person per day are as follows:

Shower: 5 gallons per minute
Shaving (water on): 3 gallons each time
Washing clothes: 20 to 30 gallons
Dishwasher: 14 gallons per load
Flushing toilet: 3 gallons per flush
Leaky toilet bowl: 35 gallons per day
Lawn watering: 80 gallons for a 90' x 90' (8,000 sq. ft.) lawn
Brushing teeth (water on): 1 gallon each time

With respect to each of the items listed above, let's see if there is a better, more resource-efficient means to get what we want. The answer in each case is a resounding yes.

There are several ways to cut back on the amount of water and energy we consume showering. The first rule is don't take unnecessary showers. When are they necessary? Many of us automatically take a shower every morning when we wake up; a good idea in most instances. However, there are exceptions. For example, if you plan to undertake some physical activity such as tennis or jogging in the morning, save your shower until after that activity. Another suggestion: don't leave the water running when you're not using it. There are generally three stages to most showers: get wet, lather up, and rinse. During the lather up stage, most people stand away from the water stream so that soap will not be rinsed away as fast as it is applied. Unless your bathroom is poorly heated, turn the water off until you are ready to rinse. You'll save over half the water and energy you would otherwise have used, and at no cost other than minor inconvenience of having to turn the water back on to rinse.

Finally, consider installing a flow controller. It reduces the flow of a standard showerhead from about 5 to 3 gallons per minute. You can install it yourself in just a few minutes, and the part itself costs about a dollar. You'll save about 40 percent on water and energy, without sacrificing the quality of your showers. See your hardware dealer for the proper part and installation instructions.

A good shave can be gotten for much less than three gallons. Don't leave the water running! Instead, fill a small cup with water and wet the razor in it. The same goes for brushing your teeth. Use a small cup of water in place of running water.

There's usually not much you can do to change the amount of water your washer uses to clean a load of clothes, but you can get the most from it. There are some machines with features that allow adjustments for smaller loads or lower water levels. The best rule for all machines is to wash only full loads and to use the lowest temperature setting possible. Use the recommended amount of detergent, too. Over-sudsing overworks the machine, shortening its life and wasting energy.

The same general principles that apply to a washer also apply to a dishwasher. If you use one, wash only full loads, lower the water temperature as much as possible, and use the proper amount of detergent. It is also wise to turn off the dishwasher after the wash cycle, letting the dishes air-dry. If you wash your dishes manually, don't leave the rinse water running steadily. Either use a rinse water basin or run the water only long enough to rinse a few dishes, turn off the water, wash a few more dishes and repeat the process. It's a little inconvenient, but it saves a lot.

The toilet bowl is a major water waster for at least two reasons. Many leak, which can waste up to 35 gallons per day. You can generally fix most leaks easily yourself. Also, most flushtanks hold much more water than they need to do their jobs. Put weights (bricks are popular) in the tank until the water storage is reduced to the minimum amount necessary. That may require a bit of experimentation, but, in general, a brick or two will save water without reducing the effectiveness of the flushing action.

Lawn watering is the single largest consumer of domestic water. Several easy steps can be applied to achieve large savings. Contact an expert (your local nurseryperson, for instance) to determine the right amount of water to apply. Buy the proper sprinkler for the dimensions of your lawn. Water early in the morning or just before you go to bed. Listen to local weather reports, and give the weather a chance to do the job for you. Also, consider watering plants in and around the house with recycled household water. Water left over from cooking and soaking clothes (no detergent) is excellent for that purpose. Cooking water, in particular, is good for watering plants because of the high nutrient content of the water. If you are thinking about doing some landscaping, try to use native plants wherever possible. They require little or no watering beyond what nature provides.

Many other service needs are more directly associated with energy use than water. Seventy percent of residential energy use goes for home heating and cooling. Another 20 percent goes for heating water, with the final 10 percent going for lighting, cooking, and small appliances.

There are numerous inexpensive ways to reduce heating costs without reducing comfort. Insulation and weatherproofing are, of course, among the most important means to that end. A few hundred dollars worth of insulation now will reduce utility bills for many years, and will raise the resale value of your home. Check with your local utility and insulation dealer to determine how much insulation you need. Weatherproofing materials are very inexpensive, and are effective in plugging major gaps in your defenses against the elements. Install storm windows, particularly on north-facing windows. Heavy guage clear plastic, firmly attached with duct tape, is almost as effective, costs less, and can be removed easily during the warm weather months. That measure is particularly important in Wyoming because so many heating units are located along walls and under windows. Our windy climate speeds the loss of heat through unprotected windows. However, weatherproofing only begins with doors and windows. Eighty percent of heat loss takes place underneath baseboards, through wall outlets in areas where plumbing pipes enter your home, around clothes dryer vents, and through holes around ventilation fans. Those leaks in your home (and pocketbook) should be caulked or stuffed with insulation. Close and turn off the heat in unused rooms. Turn the heat down to at least 65 degrees and get used to wearing a sweater. Set the thermostat back another 10 degrees while you're asleep and away from home for more than a couple of hours. When you wake up or return home, return the thermostat to its normal setting, not higher, or you'll lose what you saved. Use the sun's free heat whenever possible. Open the curtains on south-facing windows on sunny days. Keep the curtains closed on overcast days and at night. Keep curtains on north-facing windows closed at all times during the heating season. In the summer cooling season, keep the sun's direct ray out. If you heat with a furnace, perform recommended maintenance. In particular, replace or clean filters regularly. If you use radiators, keep them dust free and paint them flat black.

Insulation and turning down the thermostat are also the best ways to conserve the energy you use to heat water. If you have a gas-fired water heater, be careful not to block any air vents. Custom cut insulation pads are available for most common brands of water heaters. How low you can turn the thermostat on your water heater will depend on you and may require a bit of experimentation. Most people could turn it down to 120 degrees without any problem.

Lighting is the classic case of a need to match the tool to the task. Provide for lighting of an area that is matched to the use of that area. If a 60 watt bulb is adequate, don't use a 100 watt bulb. Concentrate lighting in reading and working areas, and reduce lighting elsewhere, if safety is not a factor. Wherever possible, use flourescent bulbs in place of incandescent bulbs. The more energy efficient flourescent bulbs are now widely available in sizes to replace incandescent bulbs.

In addition to the direct conservation measures discussed so far, the choice of *when* to use energy and water is very important and easy way to conserve indirectly. Peak energy usage usually occurs each day during late afternoon and evening hours. To meet these peaks, utilities must start up smaller generators in order to temporarily supplement their baseload generating capacity. Those smaller units consume much more fuel per unit of electricity generated than the larger power plants which operate more or less continuously. By scheduling as many household chores (vacuuming, washing clothes, etc.) as possible during off-peak hours, substantial amounts of energy can be saved. In addition, the need for expensive, new power plant construction is reduced.

The preceding discussion only begins to scratch the surface of energy conservation potential, but offers a reasonable beginning to that critical heightened level of awareness. As you adopt some of the measures described here, you'll discover other ways to save on your own. As you begin to realize money savings, the adoption-discovery process will expand and accelerate. For instance, you will begin to pay closer attention to energy conservation labels now required on all major appliances when purchasing a new appliance.

In your intensifying efforts to conserve energy, water, and natural resources, you need not go it alone. There are a number of public and private institutions eagerly standing by to help you, including financial assistance to help pay for conservation-related home improvements. Tax credits and tax deductions, that were enacted to promote conservation, are available from the federal government. In addition, a wide range of free information is available. Contact the Internal Revenue Service and U.S. Department of Energy for the details. The state energy conservation office in Cheyenne is also prepared to provide information to help you.

An indispensible service is now provided free by most public utilities. For example, Pacific Power and Light will, upon request, visit your home and perform a thorough energy audit. The audit includes identification of energy loss ares, insulation evaluation, recommended remedial measures, and provides cost estimates. With the help of Ernie, a talking computer, energy and dollar savings potential are estimated, including an estimate of how long it will take for any recommended investment to pay for itself. Informative brochures are also available free. Check with your own local public utility to see which services they offer.

Don't overlook your political power as a means to promote conservation. Make your voice one of those heard by your elected representatives at all levels of government. Demand conservation in all aspects of government operations, and urge your representatives to support conservation in the private sector through research, informational services, and tax incentives. Urge them to oppose most subsidies of resource consuming activities. When prices do not reflect true costs, the incentive to conserve is reduced. Your voice does count!

That does not mean it will be easy. It will be difficult at first to place conservation in the forefront of your consciousness. Some conservation measures may slightly reduce comfort and convenience, at least until you adjust to them. Others will actually require some work and an initial investment, and, for all your efforts, you must still share some of the payoff, even with nonconservers. But, it's really worth it. In addition to all the reasons for conservation (environmental quality, saving money, lower prices in the future, etc.) stated earlier, there's at least one more incentive to conserve wherever possible; a deep-down, good feeling you'll have. You're now part of the solution, instead of the problem.

ENERGY

What Wyomingites Think

by Mary Ann Anderson and Donald A. Anderson
University of Wyoming

In the spring of 1981, the Agricultural Experiment Station of the University of Wyoming sponsored a survey of Wyoming residents, concerning attitudes and opinions about energy-related issues. The state was split into urban areas, containing Cheyenne and Casper, and rural areas, containing the remainder of the state. A total of 882 persons (436 urban and 446 rural), or more than 70 percent of those contacted, responded to a 10-page questionnaire.

In addition, in Wyoming, Wyoming Western SUN compiled a list of persons who have made a solar or other energy-efficient adaptation to their homes. Western SUN mailed the questionnaire to 252 of these persons, and received 204 responses. These responses, hereafter referred to as the "solar goup," are used for comparison with the random sample of Wyoming residents. In the following discussion, a summary of the responses is presented.

From the random sample of 882 Wyoming residents, an estimated 73 percent consider the problem of meeting our nation's energy needs in the next 10 to 20 years to be either serious or very serious. Less than 5 percent consider it to be not a serious problem, and 22 percent consider it to be only somewhat serious. Seventy percent of these respondents feel that we should depend equally on cutbacks in energy use and increased energy production to meet these needs. Twenty percent feel that we should depend mostly (or entirely) on increased production, and 10 percent feel we should depend mostly on cutbacks in energy use. There were no significant differences in opinion between rural and urban respondents. However, among those persons who have already made some solar energy adaptation to their homes, 89 percent consider meeting the nation's energy needs either serious or very serious, and 24 percent feel we should depend mostly on energy cutbacks. Sixty-two percent indicate equal emphasis on cutbacks in use and increased production.

Respondents were presented with a list of possible ways to help meet the nation's energy needs, and asked to express their opinion on each, with a range from "Strongly Oppose" to "Strongly Favor." The resulting proportions are presented in Table 1 for both the Wyoming residents and solar groups.

An overwhelming proportion of Wyoming residents favor or strongly favor more use of solar energy (93 percent) and more use of wind energy (92 percent). The proportions favoring reduced energy use in homes (67 percent), reduced energy use in business and industry (59 percent), and reduced energy use in individual travel (53 percent) are in the majority, but less strongly so. The response to reduce energy use in agriculture was favored only by 17 percent, with 62 percent opposed or strongly opposed. In the solar group, the proportion favoring or strongly favoring is significantly higher for each of the above items. Thus, it is apparent that the increased use of the renewable resources of sun and wind is favored by a large majority, while reduced energy use in each category (except agriculture) is favored by a smaller majority.

The increased production of nonrenewable energy resources in Wyoming and in the nation is also generally favored. A very high proportion favored or strongly favored more use of Western coal (76 percent), more oil from Western shale (75 percent), and more exploration of oil in the United States (90 percent). The item "more use of nuclear power" is favored or strongly favored by 53 percent of the rural residents, and by 61 percent of the urban residents, the only item with significant differences between rural and urban. The use of more oil imports is opposed or strongly opposed by 82 percent of Wyoming residents.

From these responses it is apparent that Wyoming residents see the problem of meeting our energy needs as a serious problem. A balance of energy conservation with increased production is perceived as the direction to go in meeting these needs. There is a strong sense of moving toward self-reliance and increasing the development of solar, wind and other energy resources of the Western region. Reduction in energy use is favored for all activities except agriculture.

A list of some possible actions that might be considered in order to reduce energy use in the United States was presented to the persons in the sample. They were asked to indicate the extent to which they favor or oppose each of these items. A summary of the results is presented in Table 2. There are virtually no significant differences between urban and rural respondents; however, the solar group does differ.

There is very strong opposition to increasing the tax on gasoline, with 94 percent either opposed or strongly opposed. There is also a majority (57 percent) opposed to requiring home thermostats to be kept no higher than 65 degrees Fahrenheit in winter. Comments written by respondents indicate that, while they generally favor keeping thermostats lower, the government has no business regulating individual behavior to this extent. Some 60 percent express opposition to the item "discourage building homes away from towns and cities," again reflecting opposition to government intervention on individual choice. The response to keeping the 55 mile-an-hour speed limit is split: 42 percent oppose this item, 41 percent are in favor, and 17 percent are neutral.

The items suggesting that the government provide positive incentives for improving the energy efficiency of homes received the greatest support, with large proportions favoring larger tax credits for energy efficiency (82 percent), larger

Note: The results of this report are based on analyses of data obtained from Regional Research Project W-159, funded, in part, by U.S. Department of Agriculture regional research funds under the Hatch Act. The content of this report is the sole responsibility of the authors.

Table 1: Do you favor or oppose the following ways to meet the nation's energy needs?*

		Strongly Oppose	Oppose	Neutral	Favor	Strongly Favor
More use of solar energy	Wyo. Res.	0.2	0.1	6.5	41.6	51.5
	Solar	0	0	1.0	12.3	86.7
Reduce energy use in homes	Wyo. Res.	2.1	9.8	19.6	50.8	17.5
	Solar	0.5	1.0	8.4	42.9	47.3
More use of nuclear power	Wyo. Res.	7.9	10.6	24.5	33.2	23.7
	Solar	20.2	12.8	18.7	29.1	19.2
More use of Western coal	Wyo. Res.	0.6	6.3	16.7	48.0	28.2
	Solar	5.9	14.8	22.7	37.9	18.7
Reduce energy use in business	Wyo. Res.	2.3	14.9	22.8	44.8	15.1
	Solar	1.5	7.5	14.9	43.3	32.8
More use of oil from Western shale	Wyo. Res.	0.4	5.8	18.5	56.7	18.4
	Solar	10.4	14.9	23.8	40.6	10.4
Reduce energy use in individual travel	Wyo. Res.	5.1	19.4	22.4	41.2	10.8
	Solar	3.5	6.9	22.8	42.6	24.3
More oil imports	Wyo. Res.	32.3	50.8	12.4	3.6	0.9
	Solar	42.6	45.0	8.4	2.5	1.5
More exploration for oil in the U.S.	Wyo. Res.	0.7	1.8	6.4	47.4	43.6
	Solar	3.0	4.0	15.8	54.0	23.3
Reduce energy use by agriculture	Wyo. Res.	18.6	41.7	21.8	15.8	2.1
	Solar	10.3	32.5	19.7	26.6	10.8
More use of wind energy	Wyo. Res.	0.1	0.9	7.0	45.6	46.3
	Solar	0	1.0	3.4	32.5	63.1

*Given in percentages of total respondents.

tax credits for solar heating (76 percent), and changing of building codes to encourage energy savings (79 percent). Many of the comments made by respondents reflect perceived inequities in the current tax credit system. Tax credits for passive solar adaptations, increased insulation and improved weatherstripping, new energy-efficient construction, and conversion to wood stoves are perceived as unfairly treated with respect to tax credits. An estimated 79 percent of Wyoming residents would prefer state rather than federal programs to encourage energy saving.

While government intervention on individual households is generally opposed, some increased regulation on utilities and industry is favored. The proportions responding favorably to each item are: "require better label information," 76 percent; "require utilities to report energy use levels to customers," 67 percent; "require manufacture of more efficient appliances," 79 percent; and "require low utility rates for low users," 55 percent.

Fifty-nine percent of the Wyoming respondents feel that they could reduce their overall energy consumption by one-fourth during the next year if necessary. Seventy-six percent would be more willing to accept gasoline rationing as opposed to rationing of home heating fuel and electricity as a government action in an energy crisis. When asked whether they would be more willing to voluntarily reduce home heating costs by one-fourth or automobile use by one-fourth, 53 percent opt for reducing home heating costs.

When asked if changes in the cost of energy have made a change in their lives, 14 percent of the respondents indicate that life is "a lot worse," 56 percent indicate that it is "a little worse," 25 percent say there is "no effect" 4 percent say it is "a little better," and 1 percent say it is "a lot better." Thus, some 70 percent feel some negative impact on their lives as a result of increased energy costs. A majority of the respondents indicate at least some cutbacks in the following areas, as a result of rising energy costs: groceries (63 percent), meals out (73 percent), driving (86 percent), vacations (78 percent), recreation (79 percent), purchase of appliances or furnishings (74 percent), money in savings (80 percent), and clothing (73 percent). Only 33 percent indicate some cutbacks in health care, and only 20 percent have made cutbacks in education. Forty-nine percent indicate some cutbacks in overall housing expense, including rent or mortgage and upkeep.

Thus, Wyoming residents do perceive a negative impact of increased energy costs. As might be expected, the effect is much greater among lower-income families and families whose homes are less energy-efficient. A comparison of the solar group with the rural/urban samples indicates a lesser perceived negative effect over all of the categories mentioned above.

A list of some items that increase the energy efficiency of the home was pre-

Table 2: Do you favor or oppose the following ways to reduce energy use?*

		Strongly Oppose	Oppose	Neutral	Favor	Strongly Favor
Place higher taxes on gasoline	Wyo. Res.	39.9	43.0	9.0	76.0	1.9
	Solar	28.4	32.4	14.7	18.6	5.9
Require home thermostats no higher than 65° in winter	Wyo. Res.	17.0	40.6	16.8	19.1	6.4
	Solar	15.2	35.3	15.2	25.5	8.8
Require home thermostats no lower than 78° in summer	Wyo. Res.	12.1	23.2	21.5	31.1	12.1
	Solar	14.3	23.6	17.2	33.0	11.8
Require everyone's home to pass an energy "audit"	Wyo. Res.	17.7	28.9	18.4	27.0	7.8
	Solar	16.3	31.0	11.8	33.0	7.9
Provide larger tax credit for improving home energy efficiency	Wyo. Res.	1.2	5.2	11.8	48.3	33.4
	Solar	0.5	2.5	4.4	37.4	55.2
Provide larger tax credit for adding home solar heating or cooling	Wyo. Res.	1.0	5.7	16.0	44.9	32.2
	Solar	1.5	2.5	3.9	30.9	61.3
Require utilities to charge lowest rates to low energy users and highest rates to high users	Wyo. Res.	5.4	21.8	17.0	33.7	22
	Solar	3.9	14.8	14.3	32.0	25.0
Discourage building homes away from towns and cities	Wyo. Res.	16.8	41.1	28.1	11.7	2.2
	Solar	15.2	35.8	21.1	17.6	10.3
Change building codes and mortage requirements to engourage energy saving	Wyo. Res.	1.3	5.1	14.6	55.2	23.8
	Solar	1.[illegible]	3.4	4.4	37.4	53.7
Keep 55 MPH speed limit	Wyo. Res.	17.9	24.4	17.1	26.4	14.1
	Solar	11.8	21.6	17.2	23.5	26.0
Require better label information tell energy usage	Wyo. Res.	0.6	3.7	19.9	53.8	22.2
	Solar	1.5	3.9	14.8	51.7	28.1
Require utilities report to users on whether energy use is higher or lower than before	Wyo. Res.	1.1	6.7	24.3	52.2	15.5
	Solar	3.9	9.9	17.2	50.7	13.2
Require manufacturers to make appliances that use less energy	Wyo. Res.	1.0	5.8	13.9	52.2	27.1
	Solar	3.4	7.4	16.7	44.1	28.4
Relay on state instead of federal programs to encourage energy saving	Wyo. Res.	1.0	5.2	25.3	51.2	17.0
	Solar	3.0	7.5	25.5	39.5	24.5

*Given in percentages of total responses.

sented to the respondents. A large majority report having (or adding) some of the more standard items, such as double panes or storm windows (84 percent), good weatherstripping (78 percent), extra ceiling insulation (63 percent), insulation in walls (64 percent), and storm doors (66 percent). Very few report having some of the more nontraditional items, which can greatly improve the energy efficiency of the home. These include clock set-back thermostats (11 percent), solar hot water heaters (0.5 percent), solar heating (1 percent), and insulated window coverings (23 percent). Twenty four percent of the rural and 19 percent of the urban respondents report having a woodburning stove.

Individuals having installed the solar systems and other more nontraditional energy-saving adaptations report large savings in energy use. It would appear that these represent a fruitful area for energy conservation efforts. This, combined with the strong support for government incentives in the form of tax credits for energy conservation adaptations, strengthens this class as a potential source of energy savings.

A relatively large proportion indicate energy saving actions in the home. These include closing off some rooms in the winter (58 percent), setting the water heater to 120°F or less (62 percent), setting the thermostat at 65°F or less in the winter (51 percent), and opening and closing window coverings to take advantage of the sun (75 percent). There is some indication of a willingness to adapt to energy-efficient behavior patterns. However, in the written comments, some resentment is expressed that savings in energy use is quickly countered by increased cost.

This survey was replicated in nine other Western states, using the same questionnaire and sampling and survey procedures. There are more than 8,000 completed questionnaires from the Western region. Researchers from these 10 states are compiling and analyzing these data for regional differences and similarities. Results of this regional analysis will be available in the near future. WI

SPOTLIGHT

Patricia Linenberger, Professor of Business Administration at U.W.
U.W. Photo Service

by Kate Missett

Three things that interest Patricia Linenberger are employment discrimination, real estate, and the advertisement of legal services. Linenberger, in addition to being an assistant professor of business administration at the University of Wyoming, is a lawyer, wife, and mother.

Linenberger says, "I've done research in three basic areas. I started out doing a lot of employment discrimination research, mainly because I was a woman in law school when they didn't want women in law school, and it became a very personal type of thing." The two topics within employment discrimination which interest Linenberger are age discrimination (discrimination against teenagers, young adults, and the elderly), and sexual harassment. Linenberger declares, "Since 1964, harassment because of your sex — maybe you're getting unequal work or less pay — has been illegal. However, sexual harassment is sexual in nature. It's only been three or four years since the courts have found a cause of action for sexual harassment."

Lirenberger herself was caught in the stereotype of thinking that only young, attractive women are harassed on the job. "Women of all ages and all body builds are being harassed," she says. "I was really surprised to find that out."

According to Linenberger, many employers have tried to defend themselves against sexual harassment charges by saying that men can be sexually harassed, too. But, like whites being discriminated against, it just doesn't happen that way.

A few courts, Linenberger adds, are beginning to find it actionable if sexual harassment affects one's working environment, not just working conditions. In other words, it used to be that the only actionable charges were those which affected pay raises, promotions, and the like. Now, however, a few courts are beginning to find it actionable if one worker is constantly propositioning another worker, even if there is no leverage against the second worker's job.

In one humorous example, Linenberger notes that if there were a bisexual on an office staff, who propositioned both male and female workers, there would be no cause for action because everyone would be treated equally by the bisexual.

Linenberger has also done research concerning real estate. "One thing I'm doing in real estate that I really like, and this is one I think would really be significant to Wyoming people, is the implied warranty of habitability. This says that, when you buy a new home, the builder warrants that it is fit to live in. It used to be that this only applied to the first owner. But Wyoming is really in the lead on this — it's all state law — by saying that the second purchaser can also sue the builder. In Wyoming, with all the building that's been going on, this is really relevant.

"I did a survey of Wyoming builders, and I found out that most of them had no idea at all that they had any liability whatsoever, that they could be sued. They had never heard of the implied warranty. Because it's implied, the warranty is given whether the builder intends it or not."

Linenberger says contractors are not really being made aware of the implied warranty, because most are in and out of the state very quickly. "They come and go — you don't find stable companies." She also says that most purchasers of new homes aren't aware of implied warranty, either. "Most people think that, once they've paid for the house, if the ceiling falls in, that's their problem. They're not aware that they have these remedies."

The third area Linenberger has been working on, with assistant professor of marketing Gene Murdock, concerns legal advertising and solicitation — the advertising of legal services. The American Bar

Association (ABA) has set forth guidelines on what lawyers are allowed to advertise. "Wyoming has adopted one of the alternatives that the ABA put forth on legal advertising, but it is a very limited view.

"Now the ABA and the American Trial Lawyers Association are both saying that lawyers should be allowed to advertise anything they want, as long as it's not fraudulent. So, this is an issue that's going to be coming up again for Wyoming lawyers.

"We've just completed a survey of Wyoming lawyers and a random sampling of Wyoming residents. We're comparing the attitudes of attorneys with those of consumers. Consumers would like to have lawyers advertise.

"Most attorneys feel that advertising their fees would not help them. They don't feel it would help them to get clients. I guess my interpretation is that they'd rather keep it secret. Most lawyers don't realize that people don't like them as a professional group. They seem to be unaware that they have a bad image. They think advertising will ruin their image.

"Lawyers as a group, tend to be very paternalistic, and want to make decisions for other people that they don't want to have made for them. Lawyers won't tell their clients what's happening. They don't keep them posted. Lawyers are trying to protect consumers from things they don't want to be protected from."

Results of the research done by Linenberger and Murdock should be available this fall.

Linenberger has a varied background. She has an undergraduate degree in speech and English, a master's degree in communication, and a juris doctor degree. While she was in law school, she was asked by U.W.'s business administration department to teach business law. She stayed with the department after becoming an attorney. She has also taught junior and senior high school, as well as being an English instructor at the University of Utah.

In addition to publications and presentations in her areas of interest, Linenberger is a member of the U.W. Faculty Senate and numerous law associations. She has won eight awards or honors for her outstanding scholarship and teaching abilities, including the Amoco Foundation Good Teaching Award this past spring. Linenberger has been on the U.W. staff since 1975.

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